

THE CULTIVATOR.

NEW

"TO IMPROVE THE SOIL AND THE MIND."

SERIES.

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THE CULTIVATOR

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(Each no. containing 16 pages.)

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THE CULTIVATOR.

MONTHLY NOTICES.

CIRCULATION OF THE CULTIVATOR.

WITH the general improvement of the times, we are happy to acknowledge a very handsome increase in the patronage of the Cultivator, over that of last year. The improvement in form, and general appearance of the work, has been received with decided and general approbation; and the establishment of the "Farmer's Museum," (our 50 cent paper,) has not, as was feared by many of our friends, had the effect to reduce the circulation of the Cultivator. On the contrary, the subscription to the Cultivator is now nearly 2000 more than it was at this time last year. For this increase, we are indebted mainly to the liberal and spirited exertions of our friends. There is yet, however, much time and room for exertion, and we should be highly gratified if such of our present subscribers, as have made no exertions to increase our circulation, would do us the favor, so far to act as agents, as to make up a class of seven or fifteen subscribers. The liberal commission allowed, would amply repay any one for the effort necessary to make up such clubs. Many of our friends, who were anxious to have the Cultivator circulated in their neighborhoods, have adopted the plan mentioned in the following letter, from a gentleman in Canandaigua:

"In order to obviate any objection to the price of the subscription, I divided the \$10 for fifteen copies, into fifteen parts, and received of each subscriber his proportion of the \$10; and in this way I soon obtained the fifteen subscribers, for which I send you herewith \$10. If the friends of agricultural improvement generally, would adopt this course, I think your subscription might easily be doubled or trebled, as there are few neighborhoods

where a club of seven or fifteen subscribers might not be obtained, with but little trouble, as in this way the paper and postage would cost less than a dollar."

ACKNOWLEDGMENTS.

COMMUNICATIONS have been received since our last from R. L. Pell, Henry Watson, C. Sawyer, J. Harland, L. A. Morrell, E. Rich, J. M. Johnson, L. Durand, J. R., S. L. Gouverneur, Peter Ellis, J. R. Speed, K., S. Cassidy, S. W. Jewett, A. Subscriber, A. Young Farmer, N. Darling, Solon Robinson, J. W. Knevels, H. Weston, S. Whalen, J. J. T., Dutchess County, J. Holbrook, J. F. C., J. D. H., Old Chittenden, K. L., D., G., S. M. Spangler, Anthony & Morrison, C. N. Bement, A. R. McCord, U. Skinner, C. Rich, Richmond, S. McK., R. T. Underhill.

Our thanks are tendered to BENJ. GUILD, Esq., Secretary of the Massachusetts Society for the promotion of Agriculture, for copies of Messrs. Dana and Foote's Prize Essays—To J. M. SHERWOOD, Esq., Auburn, for the Reports on Field Crops, &c. to the Cayuga Agricultural Society, which we have handed over to the State Society, to be published in their Transactions—To Dr. E. WIGHT, Boston, for the London Pictorial News, containing views of the Queen's Poultry Houses, beautiful groups of the Cochinchina Fowls, (noticed in our last No. p. 42,) Java Bantams, &c.—(we may give these groups hereafter)—To A. W. DODGE, Esq., Sec. of the Essex (Mass.) Agricultural Society, for the Transactions of that Society for 1843—To A. G. SUMNER, Esq., Pomaria, for Mr. Ruffin's first Report on the Agricultural Survey of S. Carolina—To H. S. RANDALL, Esq., for a copy of his Report on the Common Schools of Cortland Co., and Common School Libraries—To the AUTHOR, for Observations on Vegetable and Animal Physiology, by W. L. Wight, M. D.—To Hon. W. C. CARR, for his Address before the St. Louis Agricultural Society, at its last Fair—To HENRY WATSON, Esq., East Windsor, for the Memoirs of the Penn. Agricultural Society, for 1844, and for Hints for American Husbandmen, published by the same Society in 1827.

Several communications intended for this paper, are necessarily laid over till our next. We shall in all cases endeavor to dispose of the favors of correspondents as rapidly as our limits will permit.

It will be impossible for us to publish the Addresses, requested by our friend A. WILTSE. They would occupy the whole of one number.

In answer to an inquiry, we state that Dr. CLOUD's address is Lockland, Macon co., Ala.—and that of M. W. PHILIPS, Esq. Amsterdam, Hinds co., Miss.

The Norman horse "Diligence," about which Mr. DURAND inquires, has gone back to the farm of his owner, E. Harris, Esq., Moorestown, N. J. We should be glad to receive some notice of his stock.

Our friend, G., of Spencertown, N. Y., will perceive that our plan embraces the suggestions he has made. We have given, and shall continue to give such information on gardening, &c., as we trust will be satisfactory to our patrons. At the same time, we would respectfully thank him for his hints.

BURNING LIME.—SETH WHALEN says he has "been told that lime for manuring purposes may be burned in

the field by laying up the stone and covering it somewhat like a brick-kiln," and he wishes to know whether this plan of burning lime will answer, or what is the "most simple and expeditious manner of doing it." We have seen lime burned by simply covering the piles of stones with such fuel as it was convenient to use and setting fire to it; but we do not know that this is the best way, not having had experience in the matter.

STATE AGRICULTURAL SOCIETY.

WE have received a copy of the doings of the Executive Committee of this Society, at their meeting on the 15th of February; but from the lateness of the time at which they came to hand, we are unable to give them a place in this number. They contain a variety of interesting matter, which, had it been practicable, would have given us pleasure to have published. The Committee have fitted up handsomely, for the use of the Society, the east room of the Old State Hall—and at this place the Executive Committee will hold their regular meetings, on the second Thursday of each month.

THE CULTIVATOR ALMANAC.

WE printed 30,000 copies of this Almanac, which were all disposed of long before New-Years; consequently we have been unable to supply the numerous orders since received. Another year we shall endeavor to print enough to supply the demand.

NATIVE STOCK.

In our Jan. No. we spoke of the extraordinary product in butter, of a cow belonging to Mr. George A. Mason, which received the premium at Rochester last fall, and stated that we had been informed that she was got by an imported bull. We have since received a letter from Mr. Mason, in which he assures us that we were misinformed, and that the pedigree of this cow cannot be traced to any imported stock.

MERINO SHEEP.

"A SUBSCRIBER," wishes some information in relation to the different varieties of the Merino sheep. He asks "which has the heaviest fleece, the Escorial or the Paular? Which is the hardiest, &c.?"

In the work on sheep published in England, under the superintendence of the Society for the Diffusion of Useful Knowledge, it is said that "the Escorial breed is supposed to possess the finest wool. The Guadeloupe have the most perfect form. The Paulars bear much wool of a fine quality, but have a more evident enlargement behind the ears, and a greater degree of throatiness," &c. As to the origin of these varieties, concerning which, inquiry is made, we are in possession of nothing definite; they are only sub-varieties of the Merino or Spanish sheep, the origin of which is among the mysteries of past ages.

SPRING HARROWING WHEAT.

"I wish to sow clover where I have wheat; the land is low ground or alluvial. I want to know if it will hurt the wheat to harrow in the clover seed; (my neighbors say it will.) My harrow is hinged, with forty teeth. I think I have heard of harrowing wheat at the north in the spring, but have never seen it done here.

C. CHALMERS.

Moore Co. N. C., Jan. 1844."

Where wheat has been partially killed out, or where the surface seems to be packed and close by the snows of winter, harrowing has been resorted to in some instances with success; indeed we have never known wheat injured by this process. At the north, however, we do not spring harrow wheat for the purpose of covering clover seed, as when sown early in the spring, clover rarely fails of germination and growth. Our practice is to sow it on the last light snows, if possible, as the seeds can be distributed more equally this way than in any other we have tried. The moisture furnished by the snow, and the frosts that usually occur, prepare the seed for germination and by their action on the surface, partially or fully cover the most of them, rendering the harrow unnecessary. We think our correspondent need apprehend no danger from its use; still as an experiment is easy, it may be better to test the result in that way

AGRICULTURAL COLLEGE IN TENNESSEE.

SOME of our readers may be aware that a very popular Agricultural School has been for sometime in operation near Nashville, Tennessee. Encouraged by the liberal patronage the school has received, the managers have concluded to enlarge their plan, and accordingly have procured from the Legislature a charter for an *Agricultural College*. For this institution, two teachers are now wanted. Single men, who might live in the institution, and devote their energies to the youth under their charge, would be preferred. "One of the teachers should be capable of teaching the English, Latin and Greek languages, and if one could be found who also understands French and German, he would be preferred—and the other should be capable of teaching mathematics, and if he were a chemist, so much the better." In addition to these qualifications, it is desired that the teachers should possess a taste for agriculture and horticulture, and have "confidence that agricultural education is the proper kind for youth." A young man of gentlemanly deportment, who is a practical gardener and nursery man, is also wanted.

Further particulars may be learned, by addressing (post paid,) T. Fanning, Esq., editor of the *Tennessee Agriculturist*, Nashville, Tennessee.

CHARCOAL FOR MANURE.

We see this subject is lately receiving considerable attention. Mr. F. G. L. Beuhring, makes some inquiries of us in regard to the application of charcoal to wheat land—whether it should be reduced to powder, &c. We are unable to refer him to any particular experiments which will give the desired information. We have often seen used, the dust from 'beds' where charcoal has been made. This dust consists of fine bits of coal, mixed with the dirt with which the wood is covered while undergoing the process of charring. It is frequently used for corn, putting some, (say two or three quarts,) in each hill at the time of planting. It is also sometimes spread on grass land, and we have generally noticed, that its effects were very favorable. Crops are generally better, except perhaps for the first year or two, on the beds where coal-pits have been, for several years. We have also noticed the effect of smoke from coal-pits, on the surrounding earth—and have seen grass show increased luxuriance and greenness from that cause—the rankest growth being just where, from the course of the wind, the most smoke had struck the ground.

Charcoal is recommended as a manure, because it is an absorbent of ammonia, and it is supposed that by spreading it on the soil it will absorb the ammonia from the atmosphere and transmit it to the growing plants as they require. That it is an absorbent of ammonia, may be known from its taking away the effluvia from tainted meat or fish. So completely will it do this, that we have known meat that had considerably taken hurt, made good and free from any disagreeable taste or smell, by being repacked with charcoal between each layer.

SPRING WHEAT.

THE Kennebec (Me.) Co. Ag. Soc. lately awarded a premium to Elias Gove & Son, for having raised last year 37½ bushels of red chaff spring wheat on an acre of land.

Gov. Hill states in the *Monthly Visitor*, that there were raised last year on an island in Winnepisseogee lake, "66½ bushels of fine spring wheat to the acre"—the same land having given the year before, 137 bushels of shelled corn.

DR. MITCHELL.

YOUR correspondent "Richmond" notices with pleasure, in the No. for November, 1843, the editorial remarks on the "Transactions of the first New-York Agricultural Society." He agrees with you that some of its members were "in advance of the age." He can give you some valuable information as to the agency of Dr. MITCHELL in the formation and support of that Society if agreeable to the editors of the *Cultivator*. [We should be glad to receive it.—EDTS.]

PAULAR MERINO SHEEP.

WE have received a letter from Mr. Merrill Bingham, of Cornwall, Vt., giving an account of his sheep. Not having space for the letter in detail, we give the following abstract, which comprises, we believe, the principal statements:

Mr. B. states, that about eight years ago, he purchased in Massachusetts and Connecticut, 111 full-blooded Paular Merino ewes, and placed them on his farm in Vermont. He also bought 400 sheep which were high crosses of the Merino with the native. The first buck he bought was a full-blooded Paular, from the farm of Mr. Titus, of Flushing, Long Island. For this buck he gave \$60. He afterwards purchased a buck from Rhode Island, and one from Mr. Jarvis, and continued to make such crosses as seemed to be expedient. Mr. B. says he has "kept the pedigrees of the 111 ewes which he first purchased, which would satisfy any curious mind." He says, "the one hundred and eleven ewes gave at the first shearing after I purchased them, 3 lbs. and 12 oz. of wool. Last year, from one hundred and one of their progeny, ewes, each with a sucking lamb, I sheared 5 lbs. and 2 oz. on the average, and this as the result of hay and grass feeding, without extra food of any kind. From some lambs (yearlings) I sheared from 6 lbs. 5 oz. to 7 lbs. 12 oz." Mr. B. states he has sold about 60 bucks, annually, for the last five years. Among those referred to as purchasers, is Mr. Wm. Howard, near Auburn, N. Y. In all cases the wool has been well washed on the sheep's back. He gives sheep no grain as a general rule, believing that the increase of wool from it, does not pay the cost.

Of Mr. Bingham's sheep, a correspondent from Wiliston, who signs himself "Old Chittenden," says—"It is one of the best flocks of this kind of sheep I saw in Cornwall, for fineness, evenness, length and weight of fleece; and for size, shape, and constitution, I have seen few sheep to equal them in the State."

We have been requested to copy an article from the Northern Galaxy, on the subject of Mr. Jewett's Paular Merinos; but the crowded state of our pages will not admit of our complying with the request.

THRESHING MACHINES.

Mr. LUCIUS SIMPSON of Alabama, makes some inquiries about threshing machines, to which we reply, that most of those in use in this section of country are "portable,"—that is, they may be readily moved from place to place. The kind described by Mr. S. as being placed on a wagon, and performing its work in that situation, &c. we have seen, but do not know where any of them are now manufactured. We think they are not as well liked as some others, though there may be better ones than we have seen. John A. Pitts, of Rochester, in this State, manufactures various kinds of threshing machines. He has also a "separator," which may be attached to any machine, and will thoroughly clean the grain as fast as it is threshed, without any waste. This contrivance is well recommended by those who have used it. The price for the machines, with the separator is (we think) from \$150 to \$300.

REARING LAMBS FOR THE BUTCHER.

The Essex (Mass.) Agricultural Society's Transactions for last year, contains a valuable statement from Joseph Marshall, of Ipswich, on the management of sheep for the purpose of rearing lambs for the butcher. His sheep are a quarter Merino, with what is called the native breed of the country. He keeps them in good plight, as he finds they will not otherwise be profitable. In winter they are fed on clover, or 'second crop' hay, bean and pea vines, &c. He is scrupulously attentive to the preservation of their health, by keeping them in dry places. In winter they are kept under an open shed nights, and are never allowed to be out in wet storms, day nor night. He does not even allow their skins to be wet by washing them—preferring to wash the wool after shearing. He has followed this treatment with his sheep for several

years, and has never had an unhealthy or dirty-nosed one among them—and they have never had a tick or a louse. At the time of lambing, he gives them each a gill of corn every morning, and feeds plentifully with turneps or carrots. They commence lambing in February; and last season, a part of them being put with the buck in March, again produced lambs in August—and Mr. Marshall has no doubt that had they all been with the buck at that time, they would have 'produced a second crop of lambs.' He intends hereafter to have them produce lambs twice a year. He sells his lambs at between three and four months old, at two dollars each, and finds the business profitable. His sheep average four to five pounds per fleece. Mr. M.'s pastures are high ground, not very rich, nor better adapted to sheep than most farms in the country.

THRIFTY HOGS.

Mr. J. R. SPEED gives us an account of two remarkable hogs belonging to Mr. S. D. Thompson, keeper of the Ithaca hotel. They are said to be a cross of the Berkshire and Russian breed, though Mr. Speed thinks it more probable that they are a cross of the Berkshire and Leicester. They are described as having "great length and depth of carcass, with small bone, thin skin and silk like white hair."

"They were pigged," says Mr. S., "on the 15th of Sept. 1842, and consequently were 16 months old on the 15th of Jan. 1844, on which day they weighed on the scales, alive, 1,390 lbs., and were said by Mr. Barnes, (their keeper,) to be 'as spry and playful as kittens.' They weighed on the 2d of Jan., 1,347 lbs., showing an increase of 43 lbs. in 13 days—being 21½ lbs. each."

Mr. S. informs us that the hogs were to be killed in about two weeks, when he will send us their dressed weight.

A Berkshire hog was brought to this city on the 27th Jan. which weighed, dressed, 675 lbs. He was raised by Mr. Thornton, on the farm of the Messrs. Knower, near this city. It is of some consequence to record these weights, because some think the Berkshires are too small.

Mr. LEVI DURAND, of Derby, Conn., slaughtered 6 pigs of one litter, on the 24th of Jan. that were eight months and one day old, whose aggregate weight was 1,175 lbs. The largest weighed 223 lbs., the smallest 180 lbs.

BLACK SEA SPRING WHEAT.

MESSRS. GAYLORD & TUCKER.—Believing it will be beneficial to the public to have this wheat reserved for seed, I make this communication. It is believed, in this quarter, to be superior for seed to any other spring wheat. First, because it requires but about two-thirds the usual quantity to sow an acre—2d, it yields better in a good season. If it lodges, it generally fills well—but its great superiority consists in its hardness to withstand the rust.

Our thrasher, Mr. G. Farnam, of this town, says he threshed in Cornwall, about 500 bushels of this wheat, of 1842 crop, and did not have a rusty bundle; whereas three-fourths of the other wheat was very materially damaged by rust. Of the 1843 crop, he threshed about 3000 bushels of this wheat, and found its yield superior to any other spring wheat; and also that it filled well where it lodged.

I learn that all this wheat raised in Cornwall, came from a peck of seed, procured near Boston in 1839 or '40. Some suppose there are two kinds, and that the red chaff is the best. It is dark colored, hard and heavy. Until our millers learned how to grind it, it was supposed to make inferior flour.

Homer Wright, of this town, got 44 bushels from 1½ bu. of seed; Mr. Elmore, 26 from 1 bu.; Orval Smith, 29 from 1 bu. of seed; Hiram Foster, of Whitney, 42 from 1½ bu.; B. Simonds, 41 from 1½ bu. of seed.

I am surprised that our farmers should send so much of this wheat to the mill to be ground, considering the estimation in which it is held, and that there is not more of it than ought to be sowed in two counties.

Shoreham, Vt., Feb. 14, 1844.

CLARK RICH.

RENSSELAER AG. SOCIETY.

AGRICULTURAL SCHOOL AND PATTERN FARM.

THE annual meeting of the Rensselaer Co. Agricultural Society, for choice of officers and the transaction of other business, was holden at Troy, on the 6th of February. The President, WM. P. VAN RENSSELAER, Esq. delivered an excellent address—it was a well written, common sense document. He spoke of the general advantages of agriculture—of the necessity of basing all its operations as far as possible on *system*—of the necessity of understanding the nature of soils and manures, before they can be best adapted to each other—of the advantages of encouraging all branches of home industry, particularly domestic and household manufactures—of the importance of the silk culture, the practicability of which he considered well demonstrated.

After the delivery of the President's address, Gen. VIELE introduced a resolution commendatory of the project for establishing an *Agricultural School and Pattern Farm*, and after some pertinent remarks, introduced Dr. LEE, the Chairman of the Committee on Agriculture in the House of Assembly.

Dr. LEE made some very interesting observations on the necessity of scientific knowledge in connexion with agriculture, designed chiefly to show the advantages which might be derived from such an institution as had been spoken of—an institution, where, as he said, should be taught thoroughly and alike, the *practice*, the *science*, and the *profits* of agriculture and its kindred branches. He showed that in proportion to the *skill* and *intelligence* by which labor is directed, would be the productive earnings. He cited Massachusetts as an example. No where, he said, were the laboring classes as well educated as there. That state contained one twenty-second part of the population of the Union, and produced last year, *one hundred millions of dollars worth of property*, viz: 80 millions of manufactures, 15 millions of agricultural products, and 5 millions from the sea. If the other states, said Dr. Lee, had produced property in the same proportion to the population, the aggregate would have been *twenty-two hundred millions of dollars*!

Dr. Lee was followed by Mr. COOK, one of the professors in the Rensselaer Institute, who followed up the suggestions which had been before made, with some very appropriate and interesting remarks. He spoke of the means of wealth which are lying dormant or wasting uselessly away, from an ignorance of their value. He alluded particularly to manures, and in this connection stated some startling facts. He said he was much surprised the other day, at meeting with an Englishman from London, who had come here for the purpose of purchasing bones, and who had succeeded in engaging a large quantity at seven dollars a ton. Mr. C. said there were slaughtered annually in the neighborhood of Troy, thirty thousand head of cattle, the blood and offal from which is nearly all wasted—the bones lie bleaching in the air, or are used to fill up holes, and the blood goes into the Hudson.

Mr. C. alluded to the great waste of other manures. About fifteen thousand bushels of ashes were annually bought in the vicinity of Troy, for which the farmers and others were paid 12½ cents per bushel. After taking out *twenty cents* worth of potash from each bushel of these ashes, they were sold to the Long Island farmers at 12½ cents a bushel—the original cost.

There are, said Mr. C., about 10 thousand bushels of oysters used every year in this neighborhood. It is well known by some, that the shells are an excellent manure; yet very few were saved here—they are mostly used for filling up in grading the streets, &c. and are commonly covered many feet with earth.

Mr. GROVE of Hoosick, next spoke. He was a native of Germany. In that country, the *science* of agriculture is taught in all the schools—the law requires that every teacher should be able to instruct in both the principles and practice. Every college in Germany, said Mr. G., has a professorship of agriculture.

Considerable interest was evidently aroused in relation to the subject of establishing an Agricultural School and Pattern Farm—a subject to which we are happy to see considerable attention is being directed from various sec-

tions of the state, and we hope there will be no relaxation of effort till the object is fully and successfully accomplished.

FOOD OF DIFFERENT NATIONS.

WE have been much interested by the examination of a Report made by Mr. Senior of England, on the subject of provision for the poor. It is the result of an extensive observation, and wide correspondence. The following is given as the quality of food used by an agricultural laborer, having a wife and four children.

AMERICA.

New-York.—Tea, coffee, wheat bread, meat twice a day.

Massachusetts.—Poultry, meat or fish, with rye or Indian bread twice or thrice a day.

Mexico.—Maize prepared either in porridge or their cakes, and beans, with chile, a hot pepper of which they eat large quantities as seasoning.

Carthage.—Chiefly animal food.

Venezuela.—Maize, vegetables, and fruit.

Uruguay.—Animal food.

Hayti.—Plantains, sweet potatoes, and other vegetables.

EUROPE.

Norway.—Herrings, oat meal porridge, potatoes, oat meal bread, bacon, and salt beef perhaps twice a week. Brandy in general use, distilled from grain or potatoes.

Sweden.—In the south potatoes and salt fish; in the north porridge and rye bread.

Russia.—Rye bread, buckwheat, and sour kroust; soup seasoned with salt and lard.

Denmark.—Rye bread, inferior coffee, cheese and butter.

Hanseatic Towns.—Rye bread, potatoes, bacon seldom, porridge, cheap fish.

Mecklenberg.—Good sound food, occasionally meat, beer.

Wurtemberg.—Pea soup, potatoes, rye bread, meat once or twice a week.

Holland.—Rye, cheese, potatoes, beans and pork, buttermilk, meal soup, beer.

Belgium.—Bread, potatoes, and milk.

France. (*Havre*).—Bread, vegetables, cider, rarely meat, coffee and molasses.

France. (*Brittany*).—Barley bread, potatoes, cabbages, 6 lbs. of pork weekly.

France. (*La Loire*).—Bread and vegetables, bacon or other meat now and then.

France. (*Bordeaux*).—Rye bread, Indian corn, salt and butcher's meat rarely.

Piedmont.—No meat, a little wine, bread of maize and wheat flour.

Portugal.—Salt fish, corn bread, vegetable soup with oil or lard.

Greece.—Corn or wheat bread, olives, pulse, salt fish and meat occasionally.

European Turkey.—Bread, rice, greens, olives and onions, meat about once a week.

Malta.—Millet soup, barley bread, cheese, herbs, when in employ; out of work, bread and soup only. The same remarks apply to Sicily and Italy.

Mr. Wallace gives the following as the weekly expenditure of a farm laborer in England, whose family consisted of himself, wife, and two children, and whose wages were 9s. weekly, or about \$2.25.

Two pecks of oat meal, 1s. 6d. Five pecks of potatoes, 2s. 1d. Milk, 1s. Loaf of bread, 6d. Half ounce of tea and half pound of sugar, 5d. 1 lb. of bacon, 6d. Fish, 6d. Coal, oil, soap, 1s. ¼d. Tobacco, 3d. Rent, 1s.

The food of the Irish laborer is mostly potatoes; of the Scotch, oat and barley bread, and fish.

The following singular facts are stated in Mr. Chadwick's Report on the operation of the English Poor Laws. It shows a most perverted state of things in that country, one precisely the reverse of that which should exist; and would it not be well to inquire in this country, whether the loafer and the pauper do not fare better than those who struggle to maintain their independence by honest industry? If so, we are approaching results not widely different from those that are bowing down the population of the old world with taxation and distress.

In the form of substantial food, Mr. Chadwick states that in a week

The transported thief receives,.....	330 oz.
The convicted thief ".....	239
The suspected thief ".....	181
The soldier ".....	168
The able bodied pauper ".....	151
The independent laborer ".....	122

This is reversing the law of nature and society, with a vengeance; and when a government sanctions such flagrant wrongs, it may expect that men will steal and grow fat, rather than work and starve. The food of the laborer in this country is as well illustrated in the anecdote of the Baltimore apprentice, as by any thing we have met with. An apprentice complained to a magistrate that his master was starving him. "Indeed; what does he give you to eat?" "Why—why," lisped the fellow, "nothing but bread, and potatoes, and beef, and mutton, and such like!" "Well, what would you have?" "Why—why—plum pudding, and cakes, and roast turkey, and such like!"

WATER ON FARMS—CEMENT PIPES.

THOSE only who are deprived of the advantages of good watering places on their farms, can fully appreciate the privilege they confer, or the amount of suffering they prevent, when the farm stock have no drink except such as is dealt out to them once or twice a day from a well, or are obliged to be driven a distance to a pond or a stream. It is surprising how little attention is paid to this subject of water, when so much is depending upon it, and when so little expense would in most cases provide a remedy for the evil. Wells, artificial ponds, &c. may be resorted to, when nothing better can be provided; but experience proves that running water, such as is furnished by springs, or streams, and which can be conducted to the points where it is most wanted, is not only the best for stock, but far the most economical in the end. There are few, very few farms, on which water works of this kind may not be constructed, and the water conveyed in pipes wherever desired; still we have known men bring their water for domestic use, year after year, in barrels or in hogsheads, when nothing but a little energy or skill was required to bring an abundant supply of pure spring water to their doors.

For the purpose of conveying water from a distance, pipes of various kinds have been resorted to, of which the most common are lead, wood and cement. Of these we give a decided preference to cement, unless used in circumstances where a great pressure is unavoidable, when perhaps wood or lead might be substituted. That a cement pipe properly constructed will not resist any ordinary pressure, is effectually disproved by one we have in use for conveying water to our buildings, and on which a perpendicular pressure of forty feet has not the slightest effect. We dislike lead as a conductor of water for domestic purposes, because there are very few springs that do not contain salts of some kind sufficient to have a decided corrosive action on the lead, as such pipes on examination almost invariably show, and lead is too active and dangerous a poison to be trusted in the human system in any form. Wood is free from the objection attached to lead, but its want of durability is a serious obstacle to its use. In passing through orchards, or meadows, roots will insinuate themselves through the minutest crevices, and once entered will spread and ramify, so as to speedily fill the pipe and obstruct the passage of the water. Clover is if possible, more injurious to wood pipes than the roots of trees, and we have known an aqueduct ruined, and taken up, from the obstruction caused by the roots of this plant. Observation and experience both concur in inducing us to prefer a pipe made of cement or water lime and sand, to any other material for conveying water. There are several reasons for this preference. The first is the purity and sweetness of the water so conveyed. If the water is good at the source, it is good at its delivery; no poisonous metal, or disagreeable wood taste, having been added. A well made cement pipe, is in fact, a calcareous sandstone, and preserves water as pure as would a pipe of that stone. In the second place,

a cement pipe is durable. Lead usually soon fails from corrosion, and wood from decay; a cement pipe does neither. If well bedded, and at such a depth as not to be disturbed from the surface, there seems no reason why they should not last forever. Indeed, the cement aqueducts of Rome and Jerusalem, after the lapse of some two or three thousand of years, furnish pretty good evidence on this point. In the third place cement pipe is the cheapest. It is the cheapest, because the first outlay in most cases is less than that of any other pipe, and because when once done well, it is done for all time, accidents excepted.

We have had some inquiries as to the best materials, and the best methods of making cement, both for cisterns and for water pipes, and all such we propose to answer here. The best material for cement is the water lime of Ulster or Onondaga; but it should be of undoubted quality, fresh, or packed in air tight barrels, or it will be little better than ordinary good quick lime. As few are aware of the extent to which the manufacture of water lime is carried in this state, we will remark here, that the researches connected with the geological survey of New-York, showed that in 1839, six hundred thousand barrels were manufactured in Ulster co., and an immense quantity is annually manufactured in Onondaga and Madison counties. To prepare the cement, two bushels of very coarse sand or even fine gravel, sharp and clean from all dirt or loam, is mixed with one bushel of lime. The cleaner and sharper the sand, the firmer and better the cement; great attention should therefore be paid to this part of the operation, as well as to the quality of the lime. For cisterns, or other purposes where water lime is used, the same precautions will be found essential, and if observed, failures can scarcely occur.

There are several methods of laying down cement pipe, but all so simple and easy, that any one may perform the operation; although practice enables one to work water lime pipe so much more perfectly and readily, that an experienced hand should be obtained when practicable. The first thing is to provide the water to be conducted. If a single spring, or a stream, it may be considered ready for use; if from several springs, they must be conducted to a common reservoir; and if the water is to be derived from wet grounds, deep covered drains centering at some convenient point, will be required. From this point, or reservoir, the water is to be conducted in cement pipes to the places where it is wanted. The ditch for a water pipe should be not less than two feet deep, and if intended to convey water for the use of a family, should be still deeper; as if laid shallow, the heat of the earth when the water flows any distance from the spring, renders it disagreeably warm in summer. The width of the ditch may be eighteen inches or two feet, a deep trench requiring more width than a shallow one. Where intended for the use of stock only, pipes so low as to be beyond the reach of frost, the plow, or pressure from passing bodies, are sufficient for every purpose. The bottom of the trench should be level, free from holes or soft places, as such would permit unequal pressure on the pipe, and endanger its breaking.

We have known two kinds of implements used for laying the pipe. In one of these cases, firm but flexible harness leather was sewed into a tube four or five feet in length, of the diameter it was intended to give the pipe, and then rammed full of bran. A covering of cement an inch thick was placed on the bottom of the trench, this cylinder placed on the middle of that, and a covering of cement well worked over it with a trowel, or by hand, for 20 or 24 inches. The cylinder was then drawn forward, while the cement was held back by the other hand, and thus the pipe was rapidly and perfectly formed. Two narrow boards, served to confine the cement placed on the ground for the bed, to the proper width of four or six inches, according to the bore of the pipe, and thus left the completed aqueduct of a square form on its exterior surface. In the other instance the implement for forming the pipe was a round rod turned perfectly true, some two feet in length, and perforated from end to end to allow the passage of a strong cord. To this cord is attached a piece of wood ten inches long, of the same size as the rod, turned perfectly smooth, and tapering to each end. The cement is laid over the long rod, well worked down by a

trowel, and when sufficiently covered is drawn forward, leaving the short rod attached to the cord a short distance in the rear. As the work advances, and the cement sets, which, if good, is very quickly done, the short rod is drawn forward with the effect of rendering the bore of the pipe uniform in its size, perfectly smooth, and free from every thing to interrupt the flow of the water. Either of these methods, with good materials, will produce an aqueduct sound, free, and which in a few weeks will become almost as hard as sandstone. Much, however, is depending on the thoroughness with which the mortar, or cement, is worked around the rods that form the bore. Care must be taken not to allow the rods to remain too long before they are drawn forward, as the cement, when partially set, may in that way be cracked and injured. Should such cracks occur, the work may be made safe by immediately covering the place with fresh cement.

The cement should be used as fast as prepared, or a firm pipe need not be expected. If kept dry during the construction, the work will be the better, for though such cement will in time harden under water, dryness greatly facilitates that process. If necessary, water may be allowed to flow through the pipe as fast as constructed; but it is best to avoid it if possible, and in no event must any pressure be allowed, as that would certainly destroy the work. The pipe should remain from six weeks to two months, before it is filled with water, or pressure permitted to take place. A piece of lead pipe of suitable bore, should be used to connect the cement pipe with the hydrant or pentstock, as without such precaution frost or accidental concussion might fracture the cement. If it be necessary for any part of the pipe to sustain a greater pressure than another, that part should receive a second layer of cement, well worked upon the first.

When the pipe is laid, it should be uncovered a few days to set, and then fine earth should be thrown upon it, with water to dampen it, so as to have it pack close about the pipe. At first the filling of the trench should proceed carefully; but the whole should be packed close, so as to prevent all danger of breaking. As to the expense of cement pipe, we have the authority of a man well acquainted with the business, for saying that of one inch bore aqueduct, he can lay 10 rods per day, and 13 of three-fourths inch per day. Lime of good quality, can be procured for 16 cents per bushel at the mills, and allowing 6 cents per bushel for the sand, if the work was charged at \$1.50 per day, it would be about 12 cts. per rod, and the expense of the material and laying the pipe, some 37 cts. per rod. The cost of the trench would depend on the size and depth, and of that, each can judge for himself. One dollar a rod for the whole expense would be a liberal estimate. Lead pipe would cost from \$1.50 to \$1.75, according to size, and wood could not be afforded as low as cement. We think no farmer who wishes to construct an aqueduct, will regret that he has made choice of water lime instead of lead or wood; and every man who has not water convenient on his farm, will do well to see whether he cannot obtain it in this way, at an expense bearing no comparison with the benefits that would accrue.

VIRGINIA FARMING.

THE valley of the Shenandoah, between the Blue Ridge and the North Mountain, contains the finest farming district in Virginia, and is exceeded by few, if any, sections of the United States in beauty and fertility. The soil is generally a strong limestone one, admirably adapted to the production of wheat and corn, and favorable to the perfection of all the fruits cultivated in that latitude. In a late no. of the Farmer's Monthly Visitor, we find an interesting account, furnished by the Rev. O. B. Brown, of the farm of Col. Joseph Tuley, near Winchester, the principal point of trade in the Valley. It is a beautiful domain of about 1,000 acres, of which about 800 acres are under cultivation. The house is a splendid mansion, 75 by 60 feet, built in the best manner, with suitable out houses, green house, house for laborers, &c. The green house has one of the choicest collections of rare and beautiful exotics to be found in the country. "Here are seen the Rose of Sharon and the Lily of the Valley,

in their native dress, as imported from Syria; the orange and lemon trees, loaded perpetually with fruit in their various stages, from the opening blossom to the full ripe orange and lemon. The bulrush of the Nile, such as formed the ark of the infant Moses, and the rich flowers among which it grew, together with plants from every quarter of the world, are all flourishing here."

But our principal object in alluding to this paper is to notice the course of culture pursued on this farm, Col. Tuley being considered the best farmer of the neighborhood. Col. T. pursues what is called the five years shift system, and is as follows: He takes a field two years in clover, and turns over the sod in the month of August, or early in September. From the 5th to the 15th of Oct. he sows a bushel and a half of wheat to the acre, and harrows it in. After the wheat is cut, the field lies, and becomes covered with a thick and strong growth of rag-weed. In the following spring he turns it up with the plow, and plants to corn before the middle of April. The corn is planted 4 feet apart each way, and eight or ten kernels in a hill. The cultivation is principally done with a plow, beginning as soon as the corn is fairly up, and plowing it both ways about four times in the season. At the second plowing, the hoe follows, and the corn is thinned to two stalks in the hill. The hoe is seldom used but once, and the corn is hilled no more than the plow will do it. When the corn is so ripe that it will mature in the stack, it is cut, and the land immediately put into wheat. Sometimes he sows on the seed and plows it in; sometimes he first plows, and then sows and harrows in the seed; being governed by the state of the ground. After the wheat is sown, the field is seeded to clover. After the wheat is harvested, nothing is permitted to go upon the ground to disturb the young clover. The field then lies two years in clover, when wheat again follows. In the spring of each year, half a hushel to an acre, of plaster, is sown on the clover, and heavy crops of grass are in this way secured. In this course of farming, he once raised from two acres of land 80 bushels of wheat; from a field of 60 acres, he averaged more than 31 bushels per acre; and from a field of 30 acres 65 bushels of shelled corn to the acre. He considers the clover and the plaster as the principal means of improving the soil; yet he is very careful to allow no manure to be wasted. On the contrary, he makes large quantities of it annually, which he applies to the highest parts of his fields, turning it under with the plow, which he prefers to using it as a top dressing.

Col. Tuley keeps a valuable stock of from 15 to 20 milch cows; from 80 to 100 hogs; and a flock of about 100 sheep. In his park about 300 yards from the house, he has nine or ten elks of the large Missouri breed, and about 50 beautiful fallow deer. The venison furnished by these, is very superior. The garden contains about 3 acres; and has beds of fourteen kinds of strawberries, besides raspberries, currants, several kinds of grapes, &c. &c. His orchards are extensive, embracing apples, peaches, pears, cherries, damsons, plums, quinces, apricots of the best varieties, and indeed most other fruits the climate is capable of producing. In short, Col. Tuley's farm exhibits in all its parts, much that is worthy of admiration; and in the dwelling is to be found that urbanity and hospitality which forms a distinguishing trait of the Virginia farmer.

"LOWELL OFFERING."

This publication is "written, edited and published, by FEMALE OPERATIVES, employed in the mills," at Lowell, Mass. If other proofs were wanting, we have in the pages of this periodical, abundant evidence that bodily labor is not incompatible with the culture of the mind. Some of the articles written by these *factory girls*—who work in the mills twelve hours a day, (which, by the way, we think is rather too much,) will compare favorably with the written productions of any women in the land!

The work is edited by MISSES CURTIS & FARLEY, and published monthly at \$1 a year.

INDIAN CORN.

In actual value to the country, it is probable our Indian corn crop is not exceeded by any other of our agricultural products. Adapted in some of its varieties to every part of the United States; exceeded in nutritive powers by few if any of the cultivated plants; cultivated with great ease, and only requiring one season for its perfection, it is not surprising that corn should be a general favorite, and that more land should be employed in the production of this crop, than any other one. The corn crop of the U. States may safely be estimated at 400,000,000 of bushels; and its value \$125,000,000 annually. Immense as is the quantity of corn produced, it must be evident to all, that this quantity might be greatly increased, even were no more land devoted to its culture, by a more skillful husbandry. It is only by this course, indeed, in the older states, that any increase of quantity is to be expected, since no considerable addition of land to that already devoted to this crop, can consistently be made. In the great valley of the Mississippi, it is impossible to set limits to the quantity that might be annually grown, should the demand induce the population to divert their productive energies into that channel.

There are few crops which show the effect of skillful cultivation more strongly than that of corn; and this marked improvement should induce the farmer, instead of adding to his number of acres in corn, to adopt that course which will give him the greatest crops, leaving the surplus acres to other uses. If a man, by good culture, can obtain from ten acres of land the same crop which it now takes from fifteen to twenty to give, then prepare the land so as to obtain the greater amount. That there are thousands of acres that now do not yield more than from 30 to 40 bushels to the acre, that would with thorough culture yield from 70 to 80, none acquainted with our agriculture can doubt. But we have heard it said, "if I employ all my labor and manure on ten acres, the remainder of my fields must suffer." The answer is easy; why cultivate 20, when you can get the same quantity from 10? and will rest from cropping be more injurious to the soil, than the exhausting process of cropping without manuring? Why spread the labor and the manure that applied to ten acres would give 800 bushels of corn, over thirty, and in the end receive but 600 bushels? Let it be remembered too, that a piece of land once thoroughly fitted and manured for corn, is fitted to produce a succession of good crops, which in all probability would more than repay in their extra product, any extra expense incurred for the corn.

As the season for planting corn is approaching, we have collected from various sources, notices of some remarkable corn crops, mode of culture, &c. In the selection of examples, reference has been had more to the details of treatment, than to the amount of the crop, as it is of but little use for a farmer to publish to the world that he has grown an extraordinary crop, unless he also shows *how* he has done it. For this reason we have omitted some of the heaviest crops of corn on record. And here we would remark, that in awarding the premiums for crops, our agricultural societies have not sufficiently insisted on full details of culture from the applicants. In consequence of this neglect of details, one great object of such associations has been defeated, and the good effected by them proportionably limited. This every one must feel, who turns to the reports of the societies in the different states or counties, with the view of ascertaining the best method of culture in all its parts, of any given crop.

The first instance we shall select is from the report of a crop made by Mr. Stevens of Hoboken. We do this because it is one of the earliest of our great corn crops, and shows the action of street sweepings or manure, very plainly:

"Mr. Stevens gave his ground three plowings before planting, and before the last plowing put on 700 horse cart loads of street manure. He then planted in double rows 5½ feet asunder, dibbling in each grain. To do this with expedition and accuracy, he bored two rows of holes in a piece of board about four feet long, so as to

form equilateral triangles, the sides of which were seven inches, as thus,

Into these holes he drove pegs 3¼ inches long. As the corn was dropped into the holes so made, a man followed with a basket of rotten dung with which he filled them up. During the season the corn was suckered three times. The intervals were repeatedly plowed, and the rows kept clean of weeds by hoeing and hand weeding."

This corn was raised on a bet of 50 guineas between Mr. Stevens and a Mr. Ludlow. Mr. L. planted his rows four feet apart, and the corn 8 inches from stalk to stalk in the rows. His ground was manured with 200 loads of street dirt. His crop was 98 bushels and 14 qts. per acre; Mr. Stevens 118 bushels and 2 quarts per acre. Unless the great quantity of street manure used made it necessary, or the condition of the soil was bad, no good reason can be given for so many plowings for a corn crop.

In 1831, B. Butler, Esq. of Chenango co. in this state, raised 140 bushels of corn from one acre. The soil was a stiff loam, nearly covered with small stones, of which 50 loads to the acre were taken off before tillage. It was plowed but once, but this was done in the best manner. Mr. B. adds—"We then drew on 25 cart loads (about 25 bushels to the load,) of sheep manure, and spread it evenly on the furrow. Rolled and harrowed with the furrow, with a light double harrow, containing 40 teeth, until it was a complete garden mold, and the earth well incorporated with the manure. Again picked off the stones, and again rolled and planted on the 22d and 23d of May, on an even surface, with the early small white flint corn steeped in a solution of copperas and saltpetre, and then tarred and rolled in plaster, and planted in double drills 3½ feet from center to center of the middle drill. The plants standing singly from 12 to 13 inches on the main drill. The corn was once plowed, and afterwards kept clean with the hoe, plastered well on the plant, topped at the usual time, was ripe on the 15th of Sept., and was harvested on the 14th and 15th of Oct.

In this case the sheep manure sustained the high reputation it has acquired for the corn crop, both at home and abroad, and with the exception of that produced in the hog pen, our experience would lead us to prefer the manure from the sheep fold, to any other ordinary farm manures. One thorough plowing was here found sufficient, the rest being left to the harrow; and we are convinced that in most cases one plowing well done, will be found better than more. A fine mellow seed bed must in any event be had, and the soil must be moved with either plow or harrow until this is provided.

Another example of a good crop of corn, is that of Mr. Bugbee of Palmer, Mass. who raised from five acres of land 540 bushels, or 108 bushels per acre. The following is the account given by Mr. B. of his mode of culture:—"Last spring I plowed up a piece of green sward, measuring about five acres, and prepared it for corn as well as my means would permit. After plowing, 30 loads of manure to the acre, were spread over the ground, and thoroughly mixed with the earth by means of the harrow, without turning up or breaking the sod. The ground being now prepared, on the 30th of May I planted my corn. A small quantity of ashes, lime, and plaster of paris, mixed together and prepared for the purpose, was used at the time of planting, or put in each hill. Of this mixture, there were 2½ bushels of lime, 2½ bushels of plaster, and 25 bushels of ashes for the 5 acres. The corn was hoed but twice, a third hoeing being unnecessary."

This crop affords another of the many proofs already existing of the excellent effect of such a compost of lime, plaster and ashes, especially on inverted sward, as that prepared by Mr. B. Those farmers who sell off their ashes, and harvest corn crops of only 30 or 40 bushels per acre, would do well to imitate Mr. B. in the use made of his.

In 1823, Leonard Hill received the premium offered by the Plymouth (Mass.) Ag. Society, for the best crop of corn. We condense his statement of the culture, &c. The soil naturally was deep and rich. During the previous winter, while it was greensward, his cattle were foddered upon it. In May, it was plowed very deep into

squares 2 feet 7 inches in width. It was then manured in the hole, 64 cart loads barn manure being used. It was planted early with white and flesh colored corn, varieties having small cobs. The kernels were placed about four inches apart in the hills, not thrown together as usual. In the middle of July, the corn spindled, grew very thick, and so filling the spaces that the rows were scarcely discernible. It was hoed three times, and all the suckers early cleared from it. It was gathered on the first of October. The quantity of shelled corn, ascertained by disinterested men, was 139 bushels, 3 pecks.

This was a great crop, but the account is defective in not stating the number of stalks left in each hill. The varieties of corn must have been of the small kind, or such close planting would have prevented the formation of ears. The quantity of manure was enormous.

Some of the most extraordinary crops of corn ever grown in the United States, were those produced by the Messrs. Pratt of Eaton, Madison co. In 1822, they obtained from 3 acres, 517½ bushels, or 172 bushels per acre, and in 1823, from 4 acres, 680 bushels, or 170 bushels per acre. They prepared their land in the best manner, then with a shovel plow made a trench 20 inches wide into which the manure was placed and covered. On these trenches, so covered, the seed corn was drilled in three rows, thus:

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Two feet nine inches distant, or 3 feet 9 inches from centre to centre of the rows. Another trench was made, filled, covered and drilled in similar manner. Thus the corn stood in single stalks, 6 inches apart every way, and 2 feet 9 inches clear between the rows.

It is evident that planted in this manner, more stalks would be placed on an acre than in almost any other way, but nothing short of the most heavy manuring would carry through such a crop. We have found by experience that in very dry summers, close planted corn suffers far the most, and if too near, is a total failure. We once planted a piece 2½ feet by 18 inches in the rows, intending 3 stalks to the hill. The corn was manured in the hill. The growth was very rapid and promising until the ears were about setting, when a drouth of some weeks occurred, and the result was not more than half a crop. The years in which Messrs. Pratt's crops were grown, were of the most favorable kind, and the crops, under their course of planting and culture, most astonishing.

In 1835, Mr. Brewster of Oneida co. communicated to Judge Buel an account of a crop of corn and potatoes raised by him in that year. He says, "I had a ten acre lot of stiff strong sward, that had not been plowed for many years; this I intended chiefly for Indian corn. In one corner of this I measured off one acre for corn, and by the side of it another acre for potatoes. I drew on about twenty loads of yard manure to the acre on each, turned it over, followed the plow with the roller, harrowed and furrowed three feet apart from north to south, and put down about the same quantity of manure that was turned under. Commenced planting the 20th of May; seed soaked, rolled in tar and water and plaster, put 4 grains in a hill, one foot apart. The first day planted one-fourth of an acre, which came up well; the other planted on the 22d and 23d, did not come up well, owing, as I thought, to the seed lying too long in the hot sun after being soaked, and we replanted it on the 2d and 3d of June." From the ¼ acre first planted Mr. B. had 26 bushels, 8 qts. or 105 bushels to the acre; the other ¾ did not do so well, and he only got 94 bushels and 2 quarts of shelled corn from the acre. The potatoes were planted on the 1st and 2d of June, furrows three feet apart, and the seed all whole and large, dropped one foot apart in the rows. One good dressing was given them with the plow and hoe, which was all the attention they received. At gathering, by measure he had 519 ½ bushels, by weight, 560.

Several years since that excellent farmer, Mr. Reynolds, of Delaware, on a field of 22 acres, raised 2216 bushels of corn, or 100 ¾ bushels per acre. Seven years previous to the crop, he put on 60 bushels of lime per

acre, and planted it to corn; in the following spring he put it in oats; in the fall put on 40 loads of barn yard manure per acre, and sowed it to wheat and timothy seed, and the ensuing spring with clover. It remained in grass some five years, and received one top dressing of 40 loads per acre of manure. It was mowed four or five years and gave from 2½ to 3 tons of hay per acre. In the spring of 1835 he gave it another dressing of 40 loads per acre of long manure, allowed the grass to start through it, and then with a furrow 10 inches deep, turned the whole under. The corn was planted in shallow furrows 3½ feet each way. The plow was never used in the field after planting, the cultivation being performed by the cultivator and hoe; and no hilling was allowed. Three good stalks were left on each hill. When the corn was glazed it was cut up, and put in shocks. On this statement, Judge Buel remarks: "The management which led to this extraordinary product of corn, should be deeply impressed on the mind of every farmer. 1. The ground should be well dunged with long manure. 2. It was planted on a grass ley with one deep plowing. 3. It was well pulverized on the surface with the harrow. 4. The plow was not used in the after culture, nor the corn hilled. 5. The sod was not disturbed, nor the manure turned to the surface; and 6th, the corn was cut at the ground when it was fit to top."

We had marked several other crops as worthy of note, but have room for only the following which we select as showing what crops of corn may be grown on the very northern verge of its culture, and what the treatment was that produced it.

The soil was gravelly, dry, had been cropped seven years in succession, and manured each year. In the spring of 1838, the hills of the previous year were split, a good dressing of manure put on and plowed in, harrowed, and with a light plow opened into drills 2½ feet apart. On the 19th of May, 1½ bushels of seed corn was put in a tub, and hot water poured on it, till too hot to stir with the hand. It was steeped two hours, then dried by rolling in plaster, and planted the same day in hills 16 to 18 inches apart, and from 5 to 7 kernels in a hill. On the 5th of June it had come up; on the 11th a small plow was passed between the rows lightly, turning the little mold raised to the middle, and care being taken to stir the whole surface of the ground. It was harrowed and hoed the next week, and again the week after that, the owner believing that the maturity of corn may be hastened some two or three weeks by frequent hoeing, while the plants are young. In hoeing, the earth was left nearly flat. On the first of September the corn was cut up, and husked out the last of the month. The crop when shelled, fell a few pounds short of 150 bushels of corn per acre. It should be stated, that though plenty of seed was used, only three stalks were allowed to remain in a hill, the best being selected for this purpose.

From the history of corn crops here given, and the mode of culture adopted, we think farmers may derive some useful inferences. We have omitted the great crops of Kentucky, 190 and 196 bushels to the acre, the largest yet grown in any country, as the details of culture were not at hand; and the same may be said of some of the premium crops in this and other states. We state here a few of the most prominent results disclosed:

1. The soil intended for corn must be dry; all experience proves that moist soils are unfit for the culture of this grain.

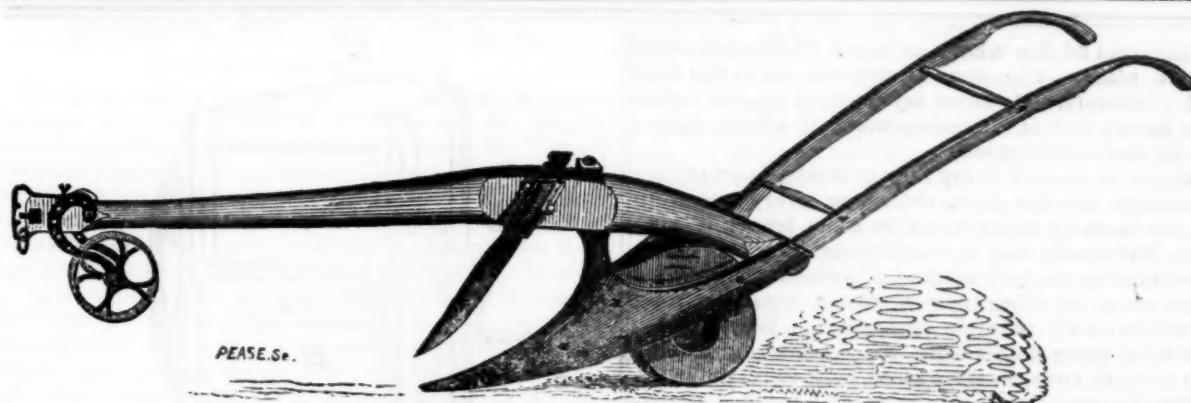
2. It should be made rich, and deep. Corn will bear heavier manuring than any other cultivated plant, and the soil should be deep to permit the roots to descend beyond all danger of drouth.

3. Preparation of the seed is useful; but no seed over soaked or swelled for planting or sowing should be allowed to become dry, as that injures its vitality.

4. The use of top dressing, such as mixtures of ashes, lime, plaster, &c. is established beyond a doubt. Perhaps there are few ways in which labor is better expended, than in placing such composts about corn.

5. The uselessness of hilling corn is demonstrated. Not a great crop of corn has been grown for years, in which this practice has been followed.

6. It is proved that corn too thick will not ear; but



SHELL-WHEEL PLOW.—(Fig. 26.)

The peculiar construction of this plow, consists in the introduction of a *friction wheel* in place of the land side, which the inventor says "works well in all soils, and saves nearly one-third of the draft." A trial made at the State Fair at Rochester last fall, showed that this plow ran with 99 pounds less draft, than another plow doing the same work, and made exactly like it, with the exception of the friction wheel—one plow requiring 298 and the other 397 pounds draft—furrow 12 inches wide and 6 inches deep. The inventor and manufacturer is THOMAS D. BURRELL, Geneva, N. Y.

that in some seasons it will bear to be thicker than others. The failure stated by Mr. Betts, of Newburgh, in the Feb. No. of the current vol. of the Cultivator, may be traced to this cause.

7. The impolicy of throwing all the corn put in a hill, when planted, together, is forcibly shown by the success of planting in drills of a single kernel, as in the case of the Messrs. Stevens and Pratts. We frequently hear men boasting how much they have planted in a day, when by planting the grain together, they lose more than would pay for many days' work.

We do not expect that every man will raise a hundred and fifty bushels of corn to the acre, even should he use every reasonable effort. There are too many concurring circumstances, all of a fortunate kind, required to make such crops common; but that any good soil, skilfully cultivated, may be made to give 70 or 80 as a medium crop, we fully believe. Fewer acres planted, and those better manured and tended, would, we are confident, much increase the corn crop of the country, as well as the profits of the farmer.

SPRING WORK.

THERE is no season of the year in which energy, activity, and good calculation is more requisite than the present. Animals of all kinds, young and old, and particularly those intended for labor, demand increased care and attention. March is one of the most trying months for animals, as they are, as the saying is, "between hay and grass," and too often the supply of either they can obtain, is barely sufficient to support life. If farmers would consider the much greater quantity of milk a cow will yield in a season that is in good condition in the spring, than one that has "been on lift" through March or April, we are confident there would not be so many skeleton cows on our farms as there now is. If too, they would for one moment reflect that a large part of an animal's power of draft lies in his weight, and that where this is wanting, and the whole is thrown on muscular exertion, the animal must soon give way, they would feel the necessity of having their working stock, horses or cattle, at this season, in good heart, their flesh sound and durable; and we should be spared the mortification of seeing so many poor and miserable teams in the field, at a time when all should be life and activity. To work well, an animal must be kept well; and the work, in nine cases out of ten will be found best done, where the teams are in the best condition. You might as well expect that an Asiatic team, of a jackass and a woman yoked together, would break up the ground to the proper depth, as that a pair of scarecrow horses or oxen can do it. Never undertake to see on how little food your teams can subsist. No better criterion is needed of the nature of a man's cultivation of his grounds, than is af-

forded by his animals; and he who starves them, will soon find his land will starve him. At this season of the year sheep require much attention, and will well repay it. Sheep are among our most profitable animals, and on the whole, require less care than most others; if the little they demand is given at the proper time. Look out for the lambs and the weak ones of the flock, and do not suffer a drove of hardy weathers to pick over and trample upon the fodder, before the ewes and lambs can get a taste.

It is an important point in commencing work in the spring, that every implement necessary should be at hand, and in first rate condition, when wanted. The good farmer has his house for his farm implements, as well as for himself or his stock, and is careful that all shall be put in their place, as fast as the season throws them out of use. In the winter, all are carefully examined, and the necessary repairs are made. The farmer who permits this work to pass until the implements are wanted in the field, will find he must lose many valuable hours, if not days, at a time when one, if lost, is with difficulty overtaken.

There is a very great fault among farmers, and we feel justified in reprobating it in strong terms, because we have been sometimes guilty of it ourselves; and that is, laying out more work than can be done by the force on the farm, timely and properly; and experience has convinced us that if work cannot be done as it should be, it is better not to meddle with it at all. Never is this fault more observable, or more injurious, than in putting in the crops of the season. There are some cultivated plants, which we may be certain will not mature unless the seeds are in the ground at about such a time—a time, it is true, varying in different latitudes, but generally well understood at any given place; yet we find some farmers so negligent, and what is worse, making an assumed trust in Providence an excuse for their laziness, as to be weeks behind the proper time of getting in the seed. Indian corn may serve as an example of such plants. As a general rule too, spring wheat, barley, or oats, if the sowing of them from any cause, is delayed beyond the proper time, although by chance, a pretty fair crop, so far as regards bushels, may be produced, yet the quality will be found inferior, the grain light, and the danger from blight, or rust, greatly increased.

Do not entertain the idea that your farm work can go on successfully, unless you give it your personal supervision. The merchant, the lawyer, the doctor, must attend to their business personally, or all will go wrong, and it is not less so with the farmer. Poor Richard never drew from his stores of wisdom a better maxim than that "he who by the plow would thrive, himself must either hold or drive." Laborers may be faithful and careful, but they cannot enter fully into all the intentions and plans of the farmer; and he must be the guiding and

directing head of the whole, or much ill directed effort will take place. The good farmer will be in the field with his laborers. He never says to them go, but come; and he knows that in the management of a farm, example is far better than precept.

It would be well if every farmer would, in arranging his business for the year, determine every season to make one or more experiments in some branch of husbandry, that would lead to some important result; either in determining the best method of procedure in regard to some crop, or bring new evidence towards settling some controverted point in agriculture. When we recollect how many points there are in husbandry about which good farmers are not agreed, such as relate to the growing of crops, times and methods of seeding, preparation of soil, rearing and fattening of animals, &c. &c., it is not a little surprising that more carefully conducted experiments are not made to throw new light upon them. There is not a farmer, who might not in this way, by well conducted experiment, and the communication of the results to some agricultural journal, do much towards introducing more correct notions, and better methods of farming than now exist.

The introduction and the propagation of good fruit, is one of the many things that must not be overlooked in any estimate of the spring labors. The man who neglects to plant fruit trees, when he has a rod of ground to plant them on, avows his intention of becoming a nuisance to his neighbors; for depend upon it, the man who is too lazy to plant, will not be too proud to beg, or above allowing his children to steal the fruit of his more industrious and careful neighbor. Every man who has cultivated a fruit garden is well aware of this state of things; and has found that the coming into bearing of a new and delicate fruit, instead of adding to his enjoyment, as it should, has only served as a signal of gathering, to these ill omened plunderers. The only remedy is for every farmer to endeavor to make the best fruits abundant; to plant enough for himself, and some to spare.

But whatever may be the nature of the labor to be done, there should be no haphazard work; nothing that has not entered into the plan of the farmer, either as principal or contingent, and been provided for accordingly. Every movement in managing a farm should be the result of reflection, of preconcerted arrangement, and directed to a certain and definite end. Were such always the case, we should see fewer badly cultivated farms, fewer pieces of work unfinished for want of time, and fewer farmers "coming out at the little end of the horn," the result of bad calculations and unthriftiness.

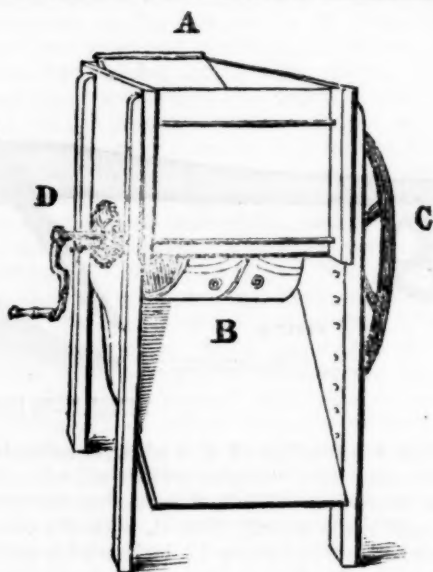
MR. PELL'S ORCHARD.

MESSRS. EDITORS—Your valuable paper is looked on as a farmer's text book in our County, and I always regret seeing typographical errors mar the sense of the communications. They are rare with you; but one appeared in your last number, containing one or two rather singular additions of figures. You say Mr. Pell, on his farm in Ulster county, has 20,000 apple-trees in full bearing. The distance of planting trees with us, is 36 to 40 feet apart; this is the distance recommended by Nicoll & Loudon in England, and is 25 or 30 trees per acre; at 40 trees per acre, 20,000 trees would make 500 acres of orchard; you must have added a cypher and intended to write 2,000 trees. Again, 20,000 grafts and not one lost; if you intended to say 200 or 2,000, it would be extraordinary success, but possibly might happen. I have heard of 200 and only 4 lost. Is there not also a cypher extra in the 300 bushels of lime per acre?

Yours, respectfully, DUTCHESS COUNTY.

We gave the statements to which our correspondent refers, just as they appeared in the New-York papers. If there is any mistake, we should be happy to have it corrected by Mr. PELL.—EDS.

In the article headed "Philosophy of wool," p. 61, line 18, of first paragraph, for "pulling," read *fulling*. The word "not," should also be omitted in the 3d line of the first paragraph in the 2d col. of same page.



CYLINDRICAL VEGETABLE CUTTER.—(Fig. 27.)

These machines, it is said, cut 800 bushels of beets or turneps in a day, and can be regulated to cut thick or thin pieces at pleasure. Cost, \$20. Manufactured and sold by ROBERT SINCLAIR, Jr. & Co., Baltimore.

NORTHAMPTON AGRICULTURAL CLUB.

WE take a pleasure in laying before our readers the following first and second articles of a new society recently organized in the beautiful village of Northampton, for the promotion of Agriculture, Horticulture, &c. We hope to see the time when every village or rural district in our land, where circumstances will admit, will have similar associations; confident as we are, that few things will contribute more to the taste, prosperity and intelligence of the population, than such societies. Let New England take the lead in this, as she is wont to do in most good works, and let us hope that the other states will not long be behind in a course of such obvious utility.

Constitution of the Northampton Agricultural, Horticultural and Floricultural Club.

Article I. This association shall be known as the Northampton Agricultural, Horticultural and Floricultural Club.

Article II. The object of the Club shall be the circulation of general intelligence, and practical intelligence in all the branches of Agriculture, Horticulture, and Floriculture:

1. By the establishment of a permanent library of the best books on these subjects.
2. By the establishment of a correspondence with other bodies seeking the same objects.
3. By procuring the most rare and valuable kinds of seeds, plants, shrubs and trees.
4. By the establishment of Lectures, Discussions, Exhibitions, and other means for the general circulation of knowledge on the subjects embraced by the Club.
5. By planting shade trees in all the avenues and public squares of the town.

The other articles refer to the officers of the society, their duties and the mode of appointment—the meetings of the society, which are to be annual and special, the latter to be notified in the newspapers of the village—the terms of membership, and to alterations of the constitution. Northampton now is one of the most delightful villages of New England; and if the objects of this association, as above defined, are carried out with spirit and effect, it will be a perfect gem in the green valley of the Connecticut. We can only say to other villages in our country, go and do likewise.

BOMMER'S MANURE.

We refer the numerous inquirers on this subject, to the Letter of Mr. ELLSWORTH, published in our Jan. No. (p. 31,) of this year, where they will find all the information we can give them on the subject.

MISSISSIPPI—HER AGRICULTURE, &c.

PRIVATE CORRESPONDENCE.

WE have, within the last few days, received an ample package from our friend M. W. PHILLIPS, M. D., the able senior editor of that excellent Journal, the "South Western Farmer," published at Raymond, Miss. It is rarely that we have been more interested than in the perusal of the several papers, and we regret that the strict injunction, "not to print," will prevent our readers sharing with us in the pleasure which the life-like sketches of domestic customs, as well as of men and things in that portion of the South would have given them. A few extracts, however, are permitted, and will be found below, and in our next. It is evident the spirit of improvement is abroad in the South, and the advance within a few years has been truly great. Indeed it could scarcely have been possible it should have been otherwise, when such men as Phillips, Affleck, Cloud, Fanning, and a host of kindred spirits, took upon themselves the labor of enlightening the public mind, and in their own practice, giving an example of what a more skilful method of culture could accomplish. There is much yet respecting the South that is misunderstood. Its capabilities and its productions have been decided upon, more with reference to the sea coast, or that of the gulf, than its vast and fertile interior. A few such men, however, as Dr. P. with his perseverance, taste and intelligence, scattered over that region, will, by the influence of their writings and their examples, correct and expand a vitiated, and limited public sentiment, and give to agriculture and horticulture their proper place in the pursuits and aspirations of the planter. Care will take the place of negligence, economy that of improvidence, and comfort, a word that embodies so many associations delightful to the lover of nature, will become more common than it now is. We give the extracts for the truths they contain, and to show what an observing intelligent man, who is willing to devote the rich gifts God has bestowed to the benefit of his fellow men, can accomplish:

"We are too improvident in all the South, to enable us to enjoy the real pleasures of the climate we live in. There are many who have little else than hog and hominy all the year, who are able to afford better living, if property be a test. There are numbers with good estates that have no fruit excepting a few peaches. The majority of my people, I do verily believe, would look upon the Dahlia as a noxious weed; the Cape Jessamine as a worthless shrub; and if it could be that a noble Camelia were standing in a field where a plow could run, even in full bloom, that it would be cut down and cast into the fire with as little compunction of conscience as if it were a sassafras or box elder. They are unable to see any beauty in the noble steed, stately cow, happy hog, farther than they contribute to the making of cotton. Yet with all this there are redeeming spirits enough in the land to make one love his fellows. They are the right sort of material to make good farmers out of; they are beginning to see beauty in all things that a beneficent Providence has given excellence to; and I look for the day when our people will build and plant, rear and nourish, with reference alike to the useful and the ornamental."

"Although I have been in Miss. since 1830, (my native place being Columbia, S. C.,) I have seen comparatively little of the state, as I have found full employment at home. I can then therefore say little as regards fruits, shrubbery, or flowers; yet a residence of two years at Philadelphia, one of the most favored northern locations for fruits, will enable me to speak of the comparative excellence of northern and southern fruit with some confidence. The best peaches, melons and figs I ever saw were in the South; the first and last in Miss., and with a single exception, the best of melons also. The best pear I ever ate was in the house of "Harry of the West;" the best apples were from northern regions. I have found as good summer and fall apples South, as I ever did elsewhere, and excepting that one pear, the Sugar, I have seen no finer than in Carolina; whilst the lums I think could hardly be beaten anywhere, that I

ate in S. C. And flowers—here is the land for this beauty of all beauties—a woman and a horse excepted—and they only, because the noble intellect governs. The pride of the forest, the Magnolia, grows here in all its majesty; many flowers that with you require protection, pass out of doors our winters—many that require considerable tact with you to propagate, can be cultivated here by any little urchin. But to return to fruits; there are too few fine varieties of fruits in this region. I know of no gentleman who has any varieties of grafted apples or pears that are in bearing, save one or two. One gentleman near Vicksburg has some fine pears, and Mr. Hatch assured me they are equal in quality to the same variety at the north, but they ripen much earlier. I have now some 25 or 30 varieties of the apple and pear, and shall put out this season at least 50 more. My reason for going so extensively into varieties, is to be certain of some that will do well. I have some ten varieties of the cherry, 5 of the strawberry, 3 of figs, and 3 of raspberries. Of peaches I know not yet what I shall have, as besides budded and northern fruits, I have some 250 seedlings three years old, and 200 more I shall put out this spring."

LETTER FROM THOMAS AFFLECK, ESQ.

WE give below some extracts from a most interesting communication received from our friend Mr. Affleck, of Ingleside, Miss. The extracts relate to topics of interest at the north as well as the south, and will aid in throwing light on the productions and modes of culture in that fertile section of the Union. The doubts which have existed as to the capability of the south to produce its necessary provisions, or to grow the principal varieties of northern fruits, doubts which had arisen more from the neglect of the planter than any other cause, will soon be dissipated by the example of a few such men as are now engaged in enlightening that section of the United States as to its capability and true policy.

Mr. Affleck has transmitted to us two specimens of cotton in the seed; one a specimen of good Mexican, and the other a specimen of that shown by Dr. Lovelace, at the Adams co. Fair, Miss., and supposed to be a hybrid between the Mexican and some long stapled cotton. Dr. L. not having completed his experiments, did not disclose the manner of its production, but we can say that a more beautiful specimen of cotton than the improved, has never met our eye, and shows most conclusively, we think, what a field is open for the well informed and scientific cultivator, in the improvement of this national staple.

The following request of our friend, we place here, that it may meet the eye of Dr. Cloud: "Let me beg of you, as I do not know his address, to say to Dr. Cloud, that if he will forward me a bushel, or what he can spare, of his *improved cotton seed*, to the care of Ringgold, Ferridy & Co. New-Orleans, he will confer on me a favor that I will gladly reciprocate." The extracts relating to sheep, pigs, and growing corn for fodder, will, we are sure, arrest the attention of the reader:

"There is but one difficulty as to *pastures*, and that is, that *none are made*. No one attempts to form pastures in any other way than by *turning out* fields after they will no longer produce cotton or corn, and being satisfied with the scanty crops of *sedge and Natchez grass*, and of briars which they may yet be able to support. Within the last year or two, however, better things are attempted. I have seen very promising woodland pasture of orchard grass; and winter pastures of Egyptian oats and rye are becoming common on well managed plantations. The cane swamps afford tolerable grazing; at all events, the swamp cattle manage to grow and even fatten on the abundant *browsing* they find there, and make pretty good beef and capital work oxen. These are the *rams-horned*, brick-colored cattle, known as Piney woods, swamp, Opelousas, or Attakapas cattle—descendants of the original Spanish stock, and yet found in those regions, *uninjured and unimproved*. During the winter, we have no lack of abundance of feed for all kinds of stock; and in summer we have only to have recourse to *Bermuda grass*, to keep every thing *seal fat*. This is the most nutritious grass I have ever seen; and where exposed, the most

closely grazed. It resembles *Nimblewill*, (*Triticum repens*?) but is more delicate in its appearance, leaves much more numerous and narrower, stems small and solid, growth rapid; and when in meadow, it does not attain a height of over 12 or 14 inches. Yet I have seen this delicate looking grass afford, at a second cutting, between 5 and 6 tons to the acre of dried hay. The first and third cuttings not so good. It stands so thick on the ground, and its numerous lateral leaves so closely interlocked, that a good hand cannot cut over more than half an acre per day, and has to cast aside the swarth with his foot, at every second or third cut; the scythe blade passing under and cutting the grass, without laying it over. It is a troublesome grass in the cotton field, but can be got under by a crop of corn and pumpkins, or oats followed by peas; it can bear little or no shade. It is invaluable for coating embankments, and is of incalculable benefit on the levees of the Mississippi. It is stated upon good authority, to be "the Dougl grass of the middle provinces of Hindostan." Whoever brought it to this country, is as deserving of a monument to his memory, here in the south, as is Parmentier in France.

"Within some three or four years, another creeping grass has made its appearance here, said to be a native of and abundant in Cuba, and is rapidly spreading; that suits their upland, and thrives better there than *Bermuda*, and is green and grows all winter, whilst the other is cut down by the first frost. I am now using it in my garden and grounds for edgings, grass plats, &c. and think it will answer well, as being easily kept within bounds, of a dwarfish growth, forming a close sod, and remaining green summer and winter. From the reports of Dr. Phillips and others, it would appear that in the *Musketo*, a Texian grass, we have another valuable resource, particularly for winter pasture. Dr. P. presented me with a small quantity of seed, which is in the ground."

"You see how I ramble along! I will now return to my forgotten text, *Sheep in the South*. You are right,—the old notion of the impossibility of growing good wool at the South, is giving way to the evidence of facts." The doctrine that all wool-bearing animals except the negro, have their wool, in a very short time, turned into hair in the South, is also exploded. True, the common sheep of the country, bred in and in for generations, and ranging now in miserable burnt up pastures, and again in the cotton fields, where they become excessively fat on the tender *winter grass*; the one season shorn, and the next allowed to surrender their coats to the briars—such sheep have thin, scanty, hairy fleeces. But they form no criterion. Are there no such animals elsewhere, "bred by, and the property of nobody in particular, the United States over?" Why is the coat of the black-faced sheep of the mountains of Scotland, so coarse and hairy, whilst that of the Merino of Spain and of New South Wales, where they scarcely ever see frost, so fine in its staple? I feel satisfied of one thing, that the finer and more spiral the staple, and the closer and heavier the coat of wool, and the greater the abundance of *yolk*, the better will the wool on the sheep's back resist the injurious effects of the sun. Sheep are kept by the planter, in almost every instance, for the mutton alone; some few manufacture the scanty crop of wool. The mutton is *very* fine, almost equal to that of the mountain heather-fed sheep of my native country—and that you know, is a great deal for a Scotchman to say! The native sheep of which I speak, are remarkably full and broad in the loin, and the saddle is of course proportionably good. Sheep seem to me always to be in good health here—one never hears of the half of a large flock dying off within a few days, as is by no means unusual in colder countries, where numbers have to be penned together for a considerable length of time.

"We have thus, you perceive, no scarcity of *beef and mutton*. Many planters in Mississippi are now making their own pork, or are exerting themselves to do so. In the neighboring County of Jefferson, this is more particularly the case. I know of several there, who last season killed and cured from 100 to 200 head; one who killed 350, and another over 700 head, all for their own home consumption. The gentleman last alluded to, assured me that all of his hogs were fattened entirely on peas, which

were planted between the corn rows at the last tending, and the hogs turned in on them after the corn is gathered; finer bacon I have never eaten. This gentleman has killed his own pork ever since the second year of his farming, some thirty years; tans his own leather, makes his own shoes, harness, &c., wagons and farming utensils; manufactures much of his winter clothing, and this without allowing himself to be influenced by the high or low prices of cotton; though of course, when cotton brought from 15 to 25 cents, he was to all appearances, sinking money in employing his hands anywhere else but in the cotton field. However, the best proof that his system was the true one, is that he is one of the wealthiest men in the country, living in the greatest comfort, his family settled round him, and his negroes comfortable and happy.

"A word more on hogs. I find that the pigs brought here from the north, grow none after warm weather sets in; and grown animals suffer much during the first summer; whilst their produce, bred here, grow and thrive well. I have imported *Newberry* here, and a fine lot of thorough bred sows, from which I am raising my plantation stock—will they do?"

"You speak of being 'anxious that some of your southern friends would try the experiment of sowing corn broadcast, as an article of food for animals, to be used for soiling during the summer, and cured and fed, after being cut, to them in the winter; and ascertain what the practicability and expense of keeping animals in this way would be.' Corn leaves, you are aware, are now used extensively; but would not the stalk cured and cut into chaff, add much to the ability of the planter to feed stock, without materially adding to his expense? It would; and in my own case, *does do so*. At 'Ingleside,' I feed nothing else. My farm here, only consists of 40 acres of an old field, which the small force I keep here, enables me to improve very slowly; the more, as to it is added five acres of garden, &c., requiring much manure. As I keep five head of horses, two mules, two yoke of cattle, from two to six cows and their calves, and some twenty to thirty head of hogs, I was forced to try some such means of making fodder, or have *blades* to haul from one of the plantations. In 1842 I sowed some corn broadcast, but the dryness of the season and the poverty of the land, prevented it doing much. I did not cut it; but the stock when turned into the field, grazed on that patch of corn as long as there was a stump of it left. That winter I fed principally on *crab grass* hay, and corn cut and shocked, Kentucky fashion—which does not do well. This last season I drilled several different patches of corn at different times during the spring and summer; drills from 2½ to 3 feet apart, and the stalks almost touching in the drill. It all did well; so well that though I had not more than an acre and half in all, I fed my stock on it during the whole summer, passing the green corn through the cutting box, with a proportion of about one-third or one-fourth of dry fodder; cutting down and curing what was left of each patch, when the next sown became ripe enough to feed out. I have thus sufficient fodder to do me, I think, or nearly so, until oats are ripe, and my drilled corn comes in again. It must be in tassel, or tasseling, before cattle and horses at all relish it; and hogs, though they eat it greedily, *fall off* on it; for the reason, I think, that they reject all but the juice, and hang round the fence all day, waiting for more. I have tried Egyptian millet and Guinea corn, but prefer the maize.

"Pulling corn blades to make fodder, I consider the most unhealthy and unprofitable work done on the plantation."

AGRICULTURAL SOCIETY IN OHIO.—Our friend Mr. G. HEZLEP, of Trumbull county, informs us that an Agricultural Society has been lately organized in that neighborhood. We rejoice to see that the spirited exertions of Mr. H. and others, for the improvement of agriculture, are producing their proper effect. Mr. Hezlep is corresponding secretary to the society.

At page 176 of our last vol., "A Young Farmer" will see a description and engraving of a windlass for raising water from wells, which will probably answer his purpose.

Foreign Intelligence.

LETTER FROM F. ROTCH, Esq.

No. 8 Sidmouth st., Regent Square, London, Jan. 1, 1843.

EDITORS OF THE CULTIVATOR—Having felt in common with some others who are interested in the advancement of agriculture, that medals might possibly be substituted with advantage in lieu of money for premiums, I took the occasion when passing through Birmingham, on my way here from Liverpool, to call on Mr. —, the medalist, a very rising man in the art, and one whose talents have during many years given celebrity to other names than his own; for till very lately he was an operative doing the work of some of the first houses in this place, and was, I understand, discharged from their employ for venturing to put his own name in the minutest lettering and in the most unobtrusive manner, on a die of considerable merit and value which he had just completed! Fortunately at this moment of indiscreet presumption, a more liberal and less mercenary capitalist crossed his path, and advised the discarded artist to commence business on his own account and in his own name. This he has done, and I was glad to find this excellent medalist doing a fair amount of work, and living in a most comfortable and neat, though small house, with a large brass plate on the door *daringly* announcing both his name and occupation. Thus may it ever be with merit, when an attempt is made to withhold from it its meed of praise and reward.

But to return; having been shown into a very pretty little parlor, whose ornaments gave evidence of taste and virtue in its owner, the *artist* himself came in, and I entered on the object of my business, when I was shown a variety of medals from dies of his own workmanship; all of which were minute and excellent in their parts, bold in their relief, and showing admirable skill in their general arrangement and execution. After describing to him what I considered the requisites of an agricultural medal for premiums, I found a well executed die of any single animal, (whether a portrait or not,) would cost from \$35 to \$40, including the reverse die for stamping the other side of the medal, with the necessary lettering descriptive of the medal and the Society; the names of the parties (gaining it,) to be put in, necessarily, by the graving tool. The impressions from such a die may be struck in Queen's metal at 25c. each, in copper at 60c. each, in silver at \$2.50, in very heavy gilt at \$3.00, and in gold according to weight. By the electro process, however, a copper medal may be gilt to a thickness which would amount to but little short of a gold one; being in fact a plate of gold supported by copper, which latter serves only to afford thickness of material for the parts that stand out in such *bold* relief from the surface, as would otherwise consume a much more expensive amount of the precious metals. Of course the die becomes the property of the parties paying for it, and the medals may be struck from it whenever they may think best.

Should, however, the first cost of the die be considered a larger appropriation for such a purpose than the funds of a County Society might seem to warrant, it must be remembered that by having *reverse* dies, the face die, supposing it to be adapted to bulls, might be made to answer for all three classes; or by a suitable arrangement of the reverse die be made to answer for as many different societies. The reverse die is not expensive, costing something like four or five dollars only.

I do not pretend to know what may be the prevailing opinion on the subject of *money* premiums; but there are some, at least, who think with me, that any and every substitution for money, would be an advantage, in as much as it would better aid the intent of the agricultural societies themselves, and better meet the prouder and nobler feelings of the competitors.

The difference it seems to me between premiums awarded in *dollars*, and those presented in books, plate, or medals, is, that in one case the event, so creditable to the exhibitor, is recorded by an abiding evidence of the society's approbation and award, which will remain a

pride and stimulus to all connected with the successful candidate. In the other case, as there is nothing distinctive in the dollar, there is nothing to be carried back as a trophy to call forth the warm sympathies of the home circle, nothing cognizable to gladden even the youth who perhaps, with many a hope and fear, faithfully attended and looked after this firstling of his father's flock. No—with the undistinguishable dollar in the pocket, nothing remains to tell the story, to realize the success—there is nothing to look at, to admire, to mark the event with those who were not present.

I need only add that if any of our agricultural societies should wish to avail themselves of my services in this, or any other way, it will afford me pleasure to render them—and with your permission, I will, in the course of the next month, have some medals left at the office of the Cultivator, for the inspection of those who may feel interested to see them. I am with respect, yours, &c.

FRANCIS ROTCH.

MR. COLMAN IN ENGLAND.—From the Mark-Lane Express, we learn that at a meeting of the Council of the Royal Agricultural Society, in London, on the 6th of Dec., Mr. Colman called the attention of the Council to the great inconvenience found at present to arise in all comparative trials in agricultural inquiries, from the want of an uniformity of the weights and measures employed in ascertaining the resulting produce. In traveling through England, he had himself found it difficult to draw accurate conclusions from the results communicated to him; in some districts, the load being said to contain three, and in others, five bushels; the bushel being on one occasion estimated at thirty-eight quarts. In weight, on the other hand, he had found the pound to be made up of sixteen, eighteen and twenty ounces, according to the custom of the particular districts; while in Cambridge, butter was sold by the *yard*, and in Nottingham by the *pit*.

LEICESTERS AND SOUTH DOWNS.—At the meeting of the Smithfield Club in London, in December last, Mr. Hillyard, a noted farmer and stock-breeder, made some interesting remarks about sheep. He said the Leicester breed, founded by Bakewell, had been the means of improving every other long-wooled breed in the kingdom. He was an extensive breeder of this sort of sheep, and the only fault with them was, they had too much fat meat in proportion to the lean. On this account they had not lately sold as well in Smithfield market, as the "black-faced sheep," (the Scotch breeds, South Downs, &c.) For this reason he had last season crossed many of his Leicester ewes with a South Down buck, by which he hoped to get more lean meat in proportion to the fat. He said "the world could not produce sheep of such beautiful symmetry as the pure Leicesters," and that it was certain they had "one great recommendation over the South downs, for a greater weight of meat per acre, could be produced with the Leicesters." We observe that several farmers in England are crossing the Leicesters with the South Downs; but in general they do not breed from the cross—they keep both breeds pure, and kill the cross-bred stock. The object is to suit the quality of the meat to the market.

CHEVIOT SHEEP.—Count de Gourcey saw a splendid flock of these sheep, on a poor and rough mountain pasture in Sutherland. He was much surprised to see these "horrible mountains and miserable pastures, stocked with such fine animals, yielding on an average 5 lbs. of long beautiful wool—wethers at three and a half years old, without having eaten any other thing but what is to be found in these wilds, weighing alive 200 lbs." "What I have seen in this journey, makes me more convinced than ever that the Cheviot breed is one of the highest merit, since they live and fatten on such land, and that, too, without adding any other food besides what these wilds produce."

SUB-SOIL PLOWING.—At a late meeting of the Cornwall Agricultural Association, Mr. Tilley stated that he had practiced sub-soil plowing for four years, and that all his crops had been greatly benefited. His carrots had doubled in quantity, his turneps had greatly increased, his mangold wurtzel was nearly doubled.

DEATH OF VAN MONS.

By the late arrivals from Europe, we learn that this distinguished chemist, able physician, profound experimental and scientific horticulturist, and celebrated linguist is no more. From various sketches of his life and writings, we condense the following brief statement, believing that it would be acceptable to our readers.

Dr. Van Mons was an entirely self-educated man; the vast acquisitions he had made in most branches of knowledge, were the result of patient perseverance, under serious disadvantages. His extensive knowledge of chemistry and languages, was the most of it gained while acting as a humble apothecary; and his taste for fruits and farming was the result of his botanical researches, and his observations of the state of agriculture around him. In 1817 he was appointed to the chair of chemistry and agriculture in the University of Louvain. Several years before he had commenced his great nurseries in the vicinity of Brussels, and at this time had in them some 80,000 trees, a large portion of them seedling pears. His appointment did not interfere with his care of his nursery, or interrupt his experiments in the production of new varieties of fruits; but in 1819, the city of Brussels conceived the idea that the ground occupied by Van Mons nurseries was wanted for new streets and squares, and he was notified that he must remove them in two months, or the whole would be cut up and burned. With the most persevering activity, he could save only about one-twentieth part of the whole. The remainder was either sold, given away, or destroyed. Unfortunately his new nursery was established on lands belonging to the town, and the authorities were the first to abandon them to pillage. They were mostly destroyed by the army during the siege of Anvers in 1831; and when, spite of these misfortunes, he had hired two pieces of ground and re-planted them, the engineers of Louvain decided that the grounds of Van Mons were of all others the most suitable spot for a gas manufactory, and they were so used in 1834.

Among the learned, Van Mons is known by his valuable papers and publications on scientific subjects, principally on agriculture and horticulture and kindred topics, while to the world generally, his name is identified with some of the finest fruits, particularly pears, yet known, produced by him in the course of his horticultural experiments. The finest collection of pears in the U. States, that of Mr. Manning of Salem, was mostly derived from trees sent out by Van Mons, or ordered from him. The theory of the propagation of fruits, known as the theory of Van Mons, ingenious and satisfactory as it is, in most respects, we cannot here touch upon. We can only add, that the history of Van Mons offers another proof of what the man can accomplish, who forms the determination, and perseveres in his efforts to be useful.

DEATH OF J. C. LOUDON.

Few men of the present age have become more extensively known by their agricultural, horticultural and floricultural works, than Mr. Loudon; they may indeed be said to mark an era in the history of agriculture. The death of such a man is a public loss, and the numerous tributes of respect to his memory, prove that his death was so considered abroad. In the publication of his floricultural works, he has been for a number of years assisted by his wife, a beautiful writer, and of fine taste, and much information on such subjects.

In landscape gardening, Mr. Loudon was without a rival in Great Britain; and many of the gardens and grounds of the nobility, are arranged according to his plans, or under his directions. The works that he published on this subject, with the accompanying engravings, furnish a better guide to the state of that art in Europe, than any thing else to be found. He was a most industrious and hard working man; independent in his feelings, modest and unobtrusive in his manners. In the language of the London Sun, "his country owes him much—perhaps more than it does to any other individual who has pursued the same walk through life. His name will be honored and respected, as long as the happiest and most interesting of human pursuits are properly valued."

LOOKING-GLASSES FOR PIGEONS.—In the Queens aviary, at Windsor, the dove-cote is lined with looking-glasses, and the pigeons, it is said, "stand for hours at the glass

panels bowing and cooing to the reciprocating compliments of their own images, and seem to be vastly pleased with the extreme polish of their admirers."

CULTURE OF LUCERNE.

We apprehend that this valuable grass has not received that attention from our farmers that it deserves. The luxuriance and rapidity of its growth, the avidity with which it is eaten by all domestic animals, and the ease with which it is in general cultivated, would seem to point it out as one of the best of grasses, especially where soiling is desirable or practicable. In our last Cultivator, we gave an account furnished by David Thomas, of his success in the culture of this plant; and the following which appeared in the American Traveller, is strong additional testimony in its favor. Mr. Phinney is not the man to waste his money or his land in the culture of valueless plants.

"On a visit to Mr. Phinney's farm in Lexington, Mass., about the middle of June, we saw a piece of lucerne or French clover, as it is often called, which had been cut three times for the purpose of soiling. Soiling is a term applied to the practice of cutting herbage crops green, for feeding live stock; and for this purpose, lucerne is considered admirably adapted. One acre is sufficient for five or six cows, during the soiling season. It is fit for the scythe in congenial soils, about the 10th of May—may be cut every twenty or twenty-five days, and is said to yield from five to eight tons per acre. Mr. Phinney's lucerne was sown in drills, and looked well. A very deep, rich, friable, sandy loam, is the soil in which it grows best. It should be sown early in May, and be subject to frequent and careful culture. Mr. Phinney appeared to be well satisfied with it."

COLD WEATHER.

THE extreme cold weather of the month of January, has elicited much remark in different parts of the country; and as the temperature of the several parts of the year have no little influence on the crops, a record of meteorological facts may be of service in forming our estimate of the future. In most places, Sunday, the 28th of January, was the coldest day, but there were several, in which difference was so small, as to be scarcely observed. We quote from the papers a few of the notices as a matter of record:

North Hadley, Mass.....	26	degrees	below	zero.
Northampton, "	31	"	"	"
Berthier, L. C.....	38	"	"	"
Saco, Me.	30	"	"	"
Saratoga, N. Y.....	34	"	"	"
Franconia, N. H.	39	"	"	"
Montpelier, Vt.	40	"	"	"

We have seen some notices in which, as at Montpelier, mercury congealed; and there are many places in which it might have been easily rendered solid. Mr. Simpson and his party, on their exploring expedition to the North Sea, made bullets of mercury when the therm. was at 49 degrees, and on the 11th of March, the spirit therm. indicated 66 degrees below 0. Below we give the average temperature of the month of January, for several years, by which it will be seen that it was much the coldest that has occurred in that time, with the exception of 1840.

January, 1838.....	29	degrees.
" 1839.....	22	"
" 1840.....	17	"
" 1841.....	26	"
" 1842.....	27	"
" 1843.....	30	"
" 1844.....	18	"

The therm. was lowest at this place on Monday, Jan. 26, when at 6 o'clock, A. M., it stood at 10 deg.; at Albany, the lowest observation was 16 deg. The cold seems to have been extensively felt over the whole U. S., as at Jacksonville, in Florida, on the night of the 26th, the therm. indicated 44 deg., ice formed, and there was a light fall of snow.

Limerock Farm, Howlet Hill, Onondaga Co., N. Y

EFFECT OF CLOVER HAY ON ANIMALS.

SOME late writers have taken the position that clover hay produces a most injurious effect on domestic animals, particularly horses, and that to this cause the great increase of diseased horses is to be attributed. We lately heard a farmer affirm, that he believed the introduction of clover into general cultivation, the greatest curse yet inflicted on the country, and assigned as a reason for this singular opinion, its effect on animals when used as fodder. Late English writers have attributed to this kind of hay, the prevalence of heaves in horses, and the great increase of other diseases that effect the respiratory organs. This is a most important subject, and should receive a full investigation. Clover is too important a plant to be discarded, or condemned, except upon the most satisfactory evidence. Its value as a fertilizer, and a preparative for wheat, to say nothing of its use for pasture or hay, would demand that it should not be condemned unheard. For ourselves, we have very little belief in the injurious properties assigned to clover. We have used it constantly for pasture and for hay, more than thirty years, and never to our knowledge, has an animal suffered from it; certainly no horse has been taken with the heaves while fed on it, or while in our possession. As hay for sheep, we have considered it unrivalled, and should have no fears that any stock would not winter well with a supply of well cured clover hay.

And here lies, we think, the great source of objection to clover hay. It is too often *imperfectly cured*. To save the leaves and the heads, which are apt to fall in handling or curing, the hay is put into the barn while the large stems are full of moisture, or the natural juices, and the fermentation which ensues, causes the whole mass to become damp, and if not spoiled wholly, it becomes mouldy, black, and when used raises such a dust, that it is no wonder that horses and cattle are choked or their lungs destroyed. Our experience shows that clover may be perfectly cured without losing any of its valuable parts; cured so that when fed out, no more dust will be flying than from timothy or herds grass, and we shall be slow to believe, that from such hay, any injury to animals ever ensues. If clover is really guilty of what a few have alleged against it; if the difficulty proves to be in the plant itself, and not in the preparation of it; then it may be necessary to find a substitute—a task, we think, by no means easy. Clover is, however, too well established in the good will of the farming community, to be easily put down, and we do not deem it likely at present, to be sneezed or coughed out of favor.

COMPOST.

"Will you be so kind as to inform me how, in making compost of muck and coarse barn yard manure, the lime is to be applied, the quantity requisite, and the time occupied in the process?"

CONANT SAWYER.

Keeseville, Jan. 1844."

In making composts where lime was used, it was formerly the practice to mix it in the pile merely slaked, but it was sometimes where used in this way found to produce little effect, and Dr. Dana recommends that it be prepared by dissolving one bushel of salt in water, and with this slaking a cask of lime, the mixture to lie some eight or ten days when it is to be incorporated with the muck; the above quantity furnishes the alkali required to convert three cords of peat or muck to a first rate compost. This if shovelled over a few times to allow full action and combination, may be applied at once to the crop or the soil. If barn yard manure is used in making the compost, there should be alternate layers of muck, barn yard manure, ashes or lime, until the requisite quantity is prepared. The time required to fit this for use will depend on the rapidity of the fermentation, temperature of the atmosphere, &c. If convenient compost heaps will be the better for being prepared the year before hand, if they can be kept from the weather.

Our correspondents inquires respecting Bommer's patent for manures will be found answered in our January number of the current vol. For that reason alone have we neglected to comply with the request made us.

AGRICULTURAL SCHOOL AND PATTERN FARM.

We would call attention to the article written by Dr. LEE, in another part of this No. It appears to us that an institution of the kind proposed, would be of great importance to the interests of agriculture. If properly managed, it would act beneficially in several ways. First, it might be regarded as a *grand focus* for the collection and dissemination of those particles of light upon rural pursuits, which are now scattered abroad in the world in such an abstract and separate manner, that they produce little good to the citizens of our country. We want some *medium* by which these facts that are now thus scattered about, one being held by one man, and one by another, and so on, may be collected, made plain, and put in possession of every man.

Secondly, such an institution would be a means of *originating*, of developing knowledge. In relation to agriculture, there are many subjects of a *doubtful* nature, such as the relative value of the various manures for the different kinds of soil, and for different plants. The relative value of different breeds of domestic animals, whether for the dairy, the stall, or for other purposes, and the most profitable means of supporting them.

Few individuals are competent to make the experiments necessary to solve these questions. More time, capital and attention are required, than they can bestow. Besides, no one feels that it is his duty to risk his time and money on a doubtful subject, when the results, let them be what they may, will be of as much consequence to the public at large, as to himself. By the aid of such an institution as this, all such questions, and others, may be put at rest—and the *whole country* would enjoy the benefit without any individual sacrifice.

IMPROVING LAND—INQUIRY.

"My land is a part of it a clay loam, part a gravelly sand, and the greater part a tolerably stiff clay; the subsoil mostly a stiff clay or hardpan. Most of this land has been subjected to the skinning system for a number of years, and is now mostly under the plow, and has been for several years; the previous owner believing his farm too small to seed down oftener than once in 8 or 10 years, and then with 4 quarts of timothy to the acre. I have sowed about 10 acres to rye, sowed it with timothy, and intend to sow it to clover in the spring, at the rate of 8 qts. timothy and 4 qts. clover per acre. This is all I have done, and now I should be glad to know what I should do, in order to bring the land into a good state of cultivation, with my limited means.

A YOUNG FARMER FROM GREENE Co."

We advise a Young Farmer to get his land seeded down as soon as possible, and for this purpose clover and timothy will be as good as any thing. With the amount of stock owned by him he can make a large quantity of manure annually, if he provides his yards and pens with the wash of roads or even common loam to act as an absorbent. Peat or muck, he says he has none, or there would be no want of materials for manure. Cultivate green crops such as buckwheat, corn, or rye to plow in as a preparation for other crops. Hardpan or stiff clay soils are usually wet; if his is of this class, drain by all means, nothing can be done to advantage on cold wet lands. If the soil is stiff, but dry, the subsoil plow will perform wonders, in deepening and fitting it for crops. If he has 150 acres of land in this condition, he has abundant room for experiment as to the best mode of recruiting; but where manures were not to be had, we have known the best results from plowing in green crops, and on these, clover, plaster, &c. we should rely.

ERRATA.

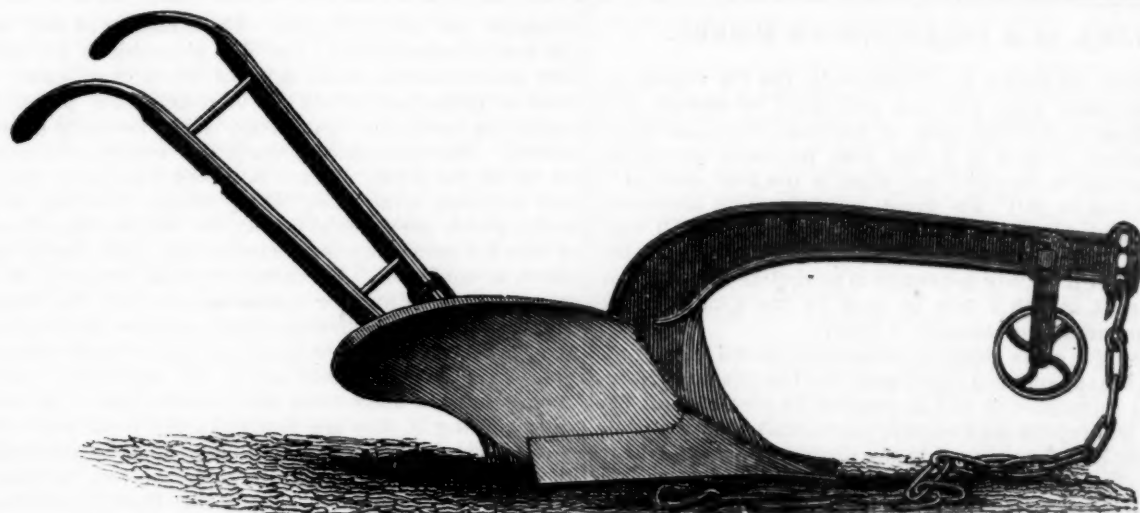
IN my communication to Solon Robinson, Jan. No. 1844, page 33, the red cedar is erroneously named *cupressus thyoides*, which is the name of the white cedar of New-Jersey, Long Island, and the Southern States, and which we here use for rail fences. Red cedar is the *juniperus virginiana*, and grows in dry and upland soil, while the other delights in swamps and low grounds.

RICHMOND.



FAT CATTLE EXHIBITED AT SMITHFIELD SHOW, LONDON, DECEMBER, 1843.—(Fig. 28.)

No. 1.—Short Horned Cow bred by Sir C. Tempest, which received the first prize in the class for best cows and heifers, and the Gold Medal as the best animal exhibited.—No. 2. Devon Steer, 1st prize in class 3.—No. 3. Short Horned Ox, 1st prize in class 2.—No. 4. Prince Albert's polled Galloway Cow.—No. 5. Lord Spencer's Durham Ox, 1st prize in class 1.



REUBEN M'MILLEN'S PATENT CAST IRON BEAM PLOW.—(Fig. 29.)

MESSRS. GAYLORD & TUCKER.—Having purchased the exclusive right of making and vending the above plow for the Counties of Albany, Schenectady, Columbia, Rensselaer and Washington, we take the liberty of forwarding you a cut of the same. It consists of four pieces of iron, exclusive of the handles or handle, as the purchaser may choose, which are of wood. It is so put together by grooves and dovetails, that one small wedge of wood holds the whole firmly and permanently together. The beam and land side are cast in one piece, except a small heel piece which is so constructed that it can easily and cheaply be replaced when worn out. The share and coulter are in one piece, and when worn out can be replaced with as little trouble and expense as any other. The mold board is in one piece, and is not exceeded by that of any plow extant for neatness and smoothness in turning a furrow. (For further information, see advertisement.)

ANTHONY & MORRISON.

Troy, Feb. 14, 1844.

TOBACCO IN CONNECTICUT.

MESSRS. GAYLORD & TUCKER—East Windsor has for a long time been as celebrated for its distilleries and tobacco as Weathersfield for its state prison and onions, and manufactures daily as many bushels of the staff of life into the soul and body destroying poison, gin, as the states prison numbers convicts. We grow in this town annually about three hundred tons of tobacco, and in the Valley of the Connecticut about five hundred tons are grown annually. The yield the last year was less than usual, 1,500 pounds being about the average per acre. The price of tobacco the last season of a fair growth was 7 cts. a pound, and most of the crop was sold before housed and cured. We have two varieties of the weed, the broad leaf and the narrow leaf—the latter is about two weeks the earliest.

It seems our tobacco is of a peculiar species, or our soil and climate are peculiarly adapted for the production of a superior article.

The soil that produces our best tobacco is a light sandy loam. We prepare our beds for the seed as early in April as possible—select the richest or best land in the garden or on the farm, moist but not wet—manure and prepare it as we do for the cultivation of cabbage or any delicate plant for transplanting—pulverize, and make the bed as fine and smooth as possible; then sow the seed broad cast about as thick as we do cabbage seed; then roll or tread down the bed thoroughly, that the seed may be pressed into the soil. The bed is kept clean of weeds. In a common season the plants will be large enough for transplanting by the 10th of June. The land for the crop should be well manured and plowed at least twice before the time of transplanting, and harrowed and rolled or bushed, and left as smooth as possible. We mark the rows three feet apart and straight; on the rows we make small hills for the reception of the plants, 2 feet to 2 feet 6 in. apart. We have our land all prepared by the time the plants are large enough for transplanting. If raining at the time, we take the advantage of it and get all our plants out; if not we set and water. After this, the field is examined several times, and where plants are dry or injured by worms others are set in. As soon as they stand well they are carefully hoed and vacant places filled with new plants—after this the cultivator is used between the rows and the crop kept clean with the hoe. The

plants are frequently and thoroughly examined for the tobacco worms, and they must be destroyed; if not the crop, is sure to be. When in blossom, and before the formation of seed, it is topped about 32 inches from the ground, leaving from 16 to 20 leaves on each stalk. After this the suckers at each leaf are broken off, and the plants kept clean till cut. When ripe, the time of cutting, the leaf is spotted, thick, and will crack when pressed between thumb and finger. It is cut any time in the day after the dew is off, left in the row till wilted, then turned, and if there is a hot sun it is often turned to prevent burning; after wilted it is put into small heaps of 6 or 8 plants, then carted to the tobacco sheds for hanging. We usually use poles or rails about 12 feet long; hang with twine about 40 plants on each rail—20 each side, by crossing the twine from the plants one side to the plants the other, the rails about 12 inches apart. It hangs from six to ten weeks to get perfectly cured, which is known by the stem of the leaf being thoroughly dried. It is then, in a damp time, when the leaves will not crumble, taken from the poles and placed in large piles by letting the tops of the plants lap each other, leaving the butts of the plants out. It remains in these heaps from 3 to 10 days before it is stripped, depending on the state of the weather, but must not be allowed to heat. When stripped it is made into small hands; the small and broken leaves should be kept by themselves. It is then by the purchaser packed in boxes of about 400 pounds, and marked *seed leaf tobacco*. The most of our last crop has been shipped to Bremen.

I think we can cultivate one acre of tobacco with the same labor and expense that we can two acres of corn that produces 60 bushels to the acre, and the manure required is about the same as for the corn crop, and I do not think it exhausts the land as much as the corn crop, for it is not allowed to seed.

HENRY WATSON.

East Windsor, Jan. 22, 1844.

WE have been presented with a scythe from the manufactory of Messrs. TAYLOR, HITCHCOCK & Co., of Wayne, Maine. It is, to appearance, an excellent article, and from the representations of Messrs. Breck & Co. of Boston, and others, by whom the scythes from this establishment have been sold, we have no doubt that they will be found satisfactory to purchasers.

LIME AS A DESTROYER OF SORREL.

MESSERS. GAYLORD & TUCKER—In the 9th volume of the Cultivator, page 123, you published an extract of a letter from G. Billings, Esq. of Carlisle, Mass., in which he inquires, "Why is it that land produces sorrel, the poor as well as the rich? and what is the best method to rid the soil of it?" To these inquiries you answered, "The acid of sorrel is the *oxalic*, and sorrel will only grow in soils where this acid is in abundance. To destroy sorrel it is only necessary to neutralize the acid that produces it, and this may be done by any alkali, but the most common and cheapest is lime."

Seeing the same doctrine concerning *sorrel* and *oxalic acid* in the agricultural paper published in this city (New-Haven) I ventured to call in question its correctness. My article was republished in other periodicals, and was made the occasion of an appeal to the distinguished Chemist of Lowell (Dr. Dana) for his opinion upon the subject. This called forth Dr. Dana's letter, republished by you in the August number of the Cultivator, 1843. The positions which I endeavored to maintain were, 1. The organic acids found in plants (the *oxalic* being one) are formed within the plants themselves, and are not extracted from the soil. 2. The *oxalic* acid does not exist in the soil. 3. The application of lime to the soil, with a view to neutralize the *oxalic* acid, is therefore misapplied, and of no use for that purpose. 4. The application of lime to the soil does not prevent the growth of sorrel.

Dr. Dana, upon the appeal made to him, says, "Plants form *oxalic* acid. The soil *seldom* contains *traces* of *oxalic* acid." In another place he terms sorrel "the *oxalite-forming* plant." The word "traces," used by the chemists, denotes a quantity so small as hardly to be discoverable—so small as not to be weighed in the analysis. Hence, according to Dr. Dana's statement, the *oxalic* acid can *seldom* be found in the soil, even in the least discoverable quantity. It is *formed in the plants* where we find it. In this, I believe, he agrees with all other chemists. He thus confirms substantially the positions which I maintained, that the *oxalic* acid is formed in the plant itself, and is not found in or extracted from the soil; and justifies my inference that "the application of lime to the soil, with a view to neutralize the *oxalic* acid, is misapplied, and of no use for that purpose." Dr. Dana, then, has decided in my favor one point which has been in dispute. I am contented to abide this decision. Therefore, if you please, Messrs. Editors, we will say no more about the use of lime in neutralizing the *oxalic* acid found in sorrel.

Dr. Dana, nevertheless, insists upon the value of lime as a destroyer of sorrel or a preventive of its growth; and explains its operation in this way. The soil contains, he says, weak organic acids. Plants transform these weak organic acids into *oxalic* acid. By applying sour muck, filled with weak organic acids and their basis, to soil, we supply it with the food of sorrel. If the acid is fully neutralized, sorrel grows not. If you supply the weak organic acids freely, sorrel grows. "The doctrine is, *neutralize the free acids*—take the sour out of the soil, and sorrel grows not." These acids may be neutralized by lime. Hence by the application of lime in sufficient quantity the growth of sorrel may be prevented—the plant may be starved. Dr. Dana supposes the *oxalic* acid to be formed in the plant, not by direct combination of its elements (oxygen, carbon and hydrogen,) but by extracting from the soil some other organic acid containing the same elements in other proportions, and by the vital power of the plant adding to or abstracting from this organic acid a proportion of one or more of these elements. He further supposes that these organic acids are taken up by sorrel *only* when the acid is combined with an alkali in such proportion as to form an *acid salt*; and therefore, if these *acid* salts in the soil are converted into *neutral* salts, by the addition of alkalis to the soil, then the sorrel will no longer find its proper food, and must perish. These, if I understand Dr. Dana correctly, are his doctrines on this subject. They are highly important and deserve much consideration. The state or condition in which the food of plants is taken up by them from the soil, has not been very satisfactorily shown by

chemists and physiologists. The elements of that food are easily demonstrated; but the proportions in which they are combined, at the moment when they enter the roots of plants and before the vegetable vital power has begun its operation upon them, is not so easily demonstrated. The process of growth and nutrition is carried on out of our sight. There is an agent at work (life) in that process, controlling every thing, directing every thing, which the chemist cannot see where it is, nor carry into his laboratory for examination. He cannot collect it or confine it. He cannot exhibit it to any of our senses, either in form or operation; and all his reasonings founded upon experiments and analyses in his laboratory, proceed upon the supposition that no such agent exists. In this uncertainty as to the conclusions which chemists are to make from their researches, it is not at all surprising if they are found to differ from each other—if Liebig for instance, should maintain that plants take up the nourishment which they derive from the soil, in the form of carbonic acid; and if Dr. Dana should maintain that they take it up in the form of *gases* variously combined, without being converted into carbonic acid. Which of these eminent chemists is right, it would be presumptuous in me to undertake to pronounce. It is not perhaps very important, in the present inquiry, which is right. For the present purpose it will be taken for granted that Dr. Dana is right and Liebig wrong; and that plants are nourished by taking up from the soil organic substances, in various states of combination with each other and with inorganic bases; and that this is a general law of vegetable physiology. The question then arises, whether the growth of sorrel is governed by the same law and carried on by the same process as the growth of other plants; or whether nature, as Dr. Dana supposes, has so constituted that plant that it can grow only when its food is presented to it in a peculiar form, such as is not required by other plants—that is to say, whether sorrel can be nourished only by *organic acid* salts, while other plants may be nourished by *organic neutral* salts, and various other combinations of the elements of their food. If Dr. Dana expects us to yield assent to his peculiar (perhaps I should add novel) doctrine on this subject, it would seem reasonable that he should give us the *facts* on which his theory is founded. It would have been gratifying if Dr. Dana had stated what are the *weak organic acids* of which he speaks—what are the *acid salts*, of which he speaks; and if he had described some experiment which he has made, or some fact that he has observed, which prove an *organic acid salt* indispensable to the growth of sorrel. In such cases it is pleasant for us to pass our own judgments, weak or imperfect as they may be, upon the theories which chemists lay before us. We must, I am aware, take many things upon trust—upon authority, and Dr. Dana is good authority for the chemistry of agriculture. But still fact is better than authority. Are there any facts which go to throw light upon this subject? It is believed that there are; and it does appear to me that a fact stated by me in the article published in the New-Haven periodical, and upon which Dr. Dana in his letter made some comments, furnishes good reason to doubt whether his theory is well founded. That the application of the fact may be fully understood, Dr. Dana's theory should be again stated. It is, that sorrel will not grow without the presence in the soil of *organic acid* salts—will not grow if the *acid* in those salts is *neutralized*. The fact alluded to is as follows: "In the neighborhood of New-Haven is a kiln for burning oyster shells, set into the side of a knoll, composed of coarse sand and pebbles [cobble stones] which have been water-worn, and washed clean of all fine matter. Nothing can be more barren than this sand. It has been drawn out of the hill and levelled off around the mouth of the kiln. Here the burnt shells have been spread, slaked, and have remained till carted away for manure. There has been left on the surface of the sand a coat of lime of considerable thickness, which has lain there for a few months past undisturbed, the burning of shells having been suspended. A few weeks ago [that is just before the time of writing the former article] I went to the kiln, and found sorrel growing, with great luxuriance, through the coat of lime—which in one

place was two inches thick about a bunch that was particularly thrifty." To avoid the inference made from this fact, Dr. Dana says, the lime being on the soil did not furnish a sufficiency of lime water or uncombined alkali to neutralize the organic acids in the soil below; and further, that the small portion of lime that has entered the soil "has caused the inert vegetable matter to become acid in a greater degree than the lime can saturate. It has formed with it an *acid salt*. In this salt sorrel finds its food." Now I have no means of measuring the quantity of uncombined lime that has been dissolved and carried into the soil below it, around the mouth of this kiln. Large quantities of shells have been hauled out and slaked there. Occasionally, the lime has laid there for days, before it was carted away. It has at no time been wholly taken away. The rains as they fell found more or less of uncombined lime lying on the surface of the ground. Some of the lime must have been washed into the ground by every considerable rain. One would naturally suppose lime enough must have sunk into the soil to saturate a pretty large amount of organic acids. But it may be asked Dr. Dana, what organic acids were there in this soil, to be neutralized? What inert vegetable matter is there, to become acid? The reader is requested to look again at the description above given of the soil where this lime was laid, and where sorrel grew—water-worn cobble stones, and water-washed, coarse [silicious] sand. If vegetable matter is there, it must exist in an exceedingly minute quantity. If organic acids are there, in any quantity, how came they there? I have very lately been to the kiln, and will add a further fact. Some young plants of sorrel, evidently from seed the past season, were found growing near the mouth of the kiln. One plant was growing in a body of slaked lime, which appeared to have lain long enough to become a carbonate. Tracing the roots with the utmost care, I could not follow any of them below the lime, which in that particular spot was from 6 to 7 inches deep. In short, here was a plant of sorrel growing in carbonate of lime, without any apparent vegetable matter. But according to Dr. Dana's theory the spot where this plant was growing must have contained organic acids in the form of acid salts. This body of lime, laid there warm from the kiln, in an uncombined state, 6 inches thick, was not sufficient to neutralize the organic acids contained in, and formed from the inert vegetable matters within its own mass. Dr. Dana may explain this; probably he can do so satisfactorily to his own mind, and perhaps to that of others; but it is beyond the skill of most of us unlearned farmers to make the explanation. This is all I have to say upon the soundness of Dr. Dana's theory. To render any further discussion upon this point, by me, profitable to your readers, requires a better acquaintance with agricultural chemistry than I possess.

Let it be admitted that Dr. Dana's theory is correct, and that if lime enough be applied to the soil it will prevent the growth of the sorrel, are there not difficulties in reducing this theory to practice, which farmers may find insuperable? And will the application of lime be what your correspondent Mr. Billings inquired after, the "best method to rid the soil of sorrel?" According to Dr. Dana's prescription the lime must be applied in such a dose as "fully to neutralize" the organic acids in the soil. "If you only *partially* neutralize, says Dr. Dana, you supply the sorrel with its natural food." Here there is one rather serious practical difficulty; that is, to know what quantity of lime to apply. It would be a great disappointment if the farmer, having been to considerable expense to procure lime to *destroy* his sorrel, to find he had only been supplying the weed with additional food—that instead of preventing its growth he had made it grow the better. Soils differ much from each other in the amount of organic matter which they contain; the same soil contains this year more or less than it did the last. In order to apply the lime in the precise quantity proper to cause the destruction instead of the growth of sorrel, it seems necessary to know exactly what amount of organic acids exist in the soil, and also the exact amount of inert vegetable matter that may be operated upon by the lime, and the exact extent to which that

operation will go in generating acid salts. All this is far beyond the skill of the generality of farmers.

Here let me state an experiment of my own made some years ago, at a time when I held to your doctrine of neutralizing the oxalic acid for the purpose of destroying sorrel. There was a piece of ground containing about 100 square rods, overrun with sorrel. It was concluded to give one-half of it a thorough liming. Accordingly 60 bushels of oyster shell lime, just burnt and directly from the kiln, were spread over one-half the piece and *plowed in*. The other half received a dressing of leached ashes and stable manure. The whole was planted with corn. *I could see no difference in the growth of sorrel on the two parts.* But the corn crop on the limed half was nearly ruined. Here then, according to Dr. Dana was an under-dose of lime—192 bushels to the acre was an under-dose for sorrel, but, as the event proved an over-dose for corn. Had there been lime enough applied, there can be no doubt the sorrel would have disappeared; but would not every thing else have disappeared also? It may well be questioned whether it is a possible thing to apply lime in such quantity as to destroy sorrel, and at the same time leave the soil in a state, fertile for other crops. It appears to me there is more nicety and precision required, in proportioning properly the lime to the acids, than can be put in practice out of the laboratory, in the coarse manipulations of the field, by men untaught in chemistry. Before Dr. Dana's theory, supposing it to be sound, can be made available for the farmer's benefit, it seems necessary that he or some one should give us some plain and definite rules for the destruction of sorrel by the use of lime—that we may know with some degree of certainty, in what quantity we are to apply it in the very diverse soils found in our country, and in the varied condition of the same soil in successive years. Until these rules are furnished, allow me to give in answer to Mr. Billings's inquiry, "what is the best method to rid the soil of sorrel," the result of my experience in the matter. Sorrel spreads, as you well know, by long stringy roots, running just under the surface of the ground. On these roots, for every inch or half inch, spring out buds which grow up into leaves and stems. The buds are formed principally in the spring and fall months—and *there is a pause in their growth about midsummer*. Plowing the ground and turning over the roots, while the buds are growing or ready to grow, that is in the spring or fall, has no effect to kill them. Hence, putting in a spring crop (not tilled) like oats, or a fall crop, like rye or wheat, tends rather to spread the sorrel than subdue it. But if the ground is thoroughly broke up *about midsummer* the sorrel is pretty apt to die. Hence a crop of buckwheat, which is sown in July is very effectual; but a crop of Ruta Baga, sown in the same month, and kept clean with the hoe or cultivator, is a still better destroyer of sorrel. For the same reason, if the roots of the sorrel are broken, and *the leaves cut off through the month of July*, as may be done in tilling a crop of corn, sorrel will generally perish. If it comes up from seed, it is as easily killed by hoeing as any weed, *provided the hoeing be done soon after the plant comes up*, and before the horizontal roots have begun to run. If the sorrel, in previous years, has gone to seed upon the land, it will be necessary to keep it under cultivation long enough for the sorrel seeds in the soil to spring up and be destroyed.

NOYES DARLING.

New-Haven, Ct., Feb. 1, 1844.

INQUIRIES ABOUT CLOVER SEED.

A correspondent wishes to know what time it is best to sow clover seed on land that is in wheat. We believe that it succeeds well, sown either on some of the last snows of winter, or soon after the frost is out of the ground in the spring, while the soil is soft.

Another correspondent wishes to know the proper quantity of clover seed to be sown to the acre. We think the quantity varies from 8 to 12 lbs, or from 4 to 6 quarts—but the quantity of this seed should be varied according to the quantity of other seeds sown with it. As to machines for cleaning seed, we refer 'H. D.' to an article in our Jan. no.

LETTER FROM SOLON ROBINSON,

TO HIS FRIEND RICHMOND OF STATEN ISLAND.

MUCH RESPECTED FRIEND—Your letter in the Cultivator of the present month, has been read with much pleasure by me, and I hope equally so by the thousands of readers of that paper: who I also hope will be pleased to meet their old friends and acquaintances in the new dress that friend Tucker has very properly put on. This method that you have adopted of interchanging facts with one another as individuals, seems to me to be a very familiar and happy way of conveying useful and amusing information to the public. Your letter too is a most complete illustration of my own theory, that if we will it ourselves, we can always find an abundance of material, out of which to work up a letter that is not only entertaining, but conveys much useful instruction. To me it sounds like the conversation of an old acquaintance from the land of my birth:

The land of rocks, and hills, and gravelly knolls,
Stone walls, and wells, where "oaken buckets" swing;
Where rivers rapid run, and where tide water rolls,
And back on mem'ry's page the scenes of childhood bring.

For among the rocks and hills of Connecticut, I was born. Although you probably thought little of doing so when you wrote, yet your letter conveys much geological and geographical information. It tells me too, that some of the inhabitants of my native state, like many others of all other states, are actually advancing backwards in civilization, when they strike from their vocabulary an ancient historical name, because it is Indian, and sounds barbarous in our delicate ears. But we differ in taste. Now to me,

There's music in the soft sounding name of "Saugatuck,"
While "Westport" harshly sounds of traffic, trade and truck.

But from your description, I judge that Mr. Ketchum in the improvement of his farm, has advanced the other way; and I doubt not that it would be useful for some western farmers, who do not now even do as much as Mr. K. used to do, make the value of a new pair of boots a year, to visit his farm and learn a lesson of improvement. But far as your country is in improvements behind what it may and will profitably be brought to, it will be many, many years before ours will be what yours now is. The west is so vast in extent and fertility, and we are so prone to run over a great deal, instead of cultivating a little land, that I despair of a life long enough to see real improvement begin, much more be brought to that successful issue which you have so pleasingly described upon the farm of Mr. Ketchum.

Over a vast extent, in the region of country where I live, stone walls will never be built for fencing; for there are no stones except scattering boulders, principally granite, which have been wafted here upon their ice boats, from a far distant, and to me unknown locality, and lie scattered wherever their frail conveyance melted beneath the rays of a warming sun. These stones as they lay upon or near the surface, are a little detriment to the plow, but are easily removed, and will always be valuable to the owner of the land, and well worth his care in collecting and laying up till time of need. And in some large districts, even this small supply of such a useful material, is entirely lacking. Even where most plenty, they are of such a rough uneven shape, and exceeding hard quality, that I would defy the superior accomplishments of the celebrated Yankee stone wall builder, whom you mention, to lay them into a decent looking stone wall, fire place or well; so they are seldom used except for underpinning. In the first settlement of the country, when brick cannot be obtained, a very good fire place and hearth is made by pounding clay a little damp, into a compact mass, the shape that is required for the fire place, while the chimney is built of sticks and clay, which if well done, costs but little labor and lasts for years. But that is more than I can say of the wooden walls of wells, for at first they give our "hard water" a very ancient and bilge water like smell, and by the time that is well over with, the wood begins to decay, and which I have no doubt is one of the many removable causes of sickness which is wrongly charged to the unhealthiness of the climate. Also the sinful carelessness in which a great portion of the inhabitants permit themselves to live in

cold, open, damp, uncomfortable houses, is the cause of many a day of suffering from fever and ague. Your profession, as well as long experience, has taught you what all had ought to learn, that we are less liable to take cold and contract disease when "camping out" in the open air, than we are while living in what we are pleased to call a house, through the walls and roof of which, the old cat and all her kittens can go without let or hindrance. And in such houses, a vast majority of the inhabitants of the west stay, and not only for a season, but year after year, using water from such wells, or what is more common, from some hole in the ground that is familiarly called "the spring," (on account I suppose of the frogs that spring into it,) and occasionally going without bread, because it is too much trouble to go to mill; doing without potatoes, because they were too busy to dig them before they froze up; doing without pork half the year, notwithstanding they had a thousand and one hogs, but they were in the woods, and didn't come up; and as a substitute, living upon fresh beef, green corn and unripe wild fruits, and ten thousand et ceteras of the fever breeding family, and as a most natural consequence, shaking with the ague so much of the time that they have no time to build stone walls, drain peat swamps, build barns and houses, and of course they have no money to devote to improvement of lands, while there is so much land for sale, every spare dollar is devoted to a further accumulation of acres, to lie like those already owned, idle, untilled and unproductive; or if tilled, quantity and not quality of tillage, seems to be the very height of ambition among western cultivators.

Do not think that this is an over-wrought picture. It is not a week since I visited one of my friends who owns fifty cows, whose good wife had to make an excuse to mine that she had no cream for her coffee. And this arose wholly from the prevailing western epidemic—carelessness. And do not imagine that your friend Solon is a singular exception to this all-pervading disease.

Although my log cabin is rather "aristocratically comfortable and convenient," and my well is walled with brick, with a pump, &c., and I never was out of pork and potatoes since my first winter here, yet I have sometimes looked in vain for my hogs in the woods, and bought land when I had much better been improving that already owned; yet I keep clear of the fever and ague, and candidly believe that this country is generally as healthy as all new countries usually are. The soil is extremely productive, yet it must be acknowledged that few of us at the end of the year are any better able from the profits of farming, "to buy a new pair of boots," than your friend Ketchum used to be, while pursuing the same careless, skinning system of farming. It is true, that manuring our soil produces but little present advantage, but the time will come when the waste of it will be seen. One reason, perhaps the greatest one, why a more stable system of farming is not pursued in this country, is because that not one person in a hundred feels as though he was working for himself and children; such is the universal all-pervading disposition to change. There is no certainty if a man makes improvements this year, that he will enjoy them next; for the fashion of "selling out," and making a new location, is so strong, that no one can resist it; so that it may be said that nearly the whole of the western population are afloat, with sails unfurled and anchors tripped, and ready to be off with the first favorable breeze that blows. If then you ever travel through the west, bear this in mind, that it may serve as an explanation why you see so few, such solid and permanent improvements as those you have described upon the banks of the Saugatuck. How seldom will you see a synonym of these good roads that you mention, while traveling over this country. For the same neglect of improvement is painfully visible upon the roads as upon the farms. But you must also bear in mind that we are yet in our infancy, and that every thing is to be created anew. That in buying a farm, you get a perfect naked piece of smooth prairie, covered with a thick strong sod, that requires a strong team of three or four yoke of oxen to break up to advantage; and this sod requires several years to rot before it becomes perfectly mellow for tillage. And how much is required beside the breaking up of the ground

before such a tract of land is justly entitled to the appellation of farm. What a different aspect will this country present when it has been so long settled as that you have described. Vast tracts of the prairie will be cultivated, but without fence, and timber will be grown for fuel and building. The locust that you mention, grows most luxuriantly upon this soil. No doubt that and other timber can be grown to great advantage and profit. Some of the numerous marshes will also be found to afford combustible turf; and through a great part of the Illinois prairies, stone coal can be conveniently obtained. But I must close, for my sheet is full, and the loss of the franking privilege warns me not to tax my friends with a double postage while that upon a single sheet is exorbitantly high. I thank you for your sympathy for my removal from an office that I endeavored to use for the public good. Shall I hear from you again soon? I remain your friend,

SOLON ROBINSON.

Lake C. H., Ia., Jan. 20, 1844.

AGRICULTURAL CHEMISTRY.

Lectures on Agricultural Chemistry and Geology, by Jas. F. W. Johnston, M. A. &c. a new and enlarged edition, in 2 vols. 8 vo. pp. 434 and 405. Wiley & Putnam, New-York, 1843.

EDITORS OF THE CULTIVATOR—Having called the attention of young farmers to Liebig's Familiar Letters, in a preceding communication, your correspondent in noticing the above entitled work, thinks he is doing them a service, provided he can persuade them to read as well as to labor, to refresh the mind as well as the body. In the ordinary state of farming operations we go "from labor to refreshment." But the refreshment is *animal* and not *intellectual*; it nourishes the *body* and not the *mind*. We want to rear a generation of intelligent farmers who are hereafter to wield the destinies of this great country, and prevent its administration from falling into the hands of intriguing demagogues, or ignorant disorganizers.

Youth is certainly the best period to study and improve in knowledge, but we do not all have the time, the opportunity, or the impulse, so to do in our younger days. Deficiency, however, may be made up by diligent application in after life, when we see and feel the necessity of acquiring information. Adults and farmers may think it childish and effeminate to read and study, but books are not all published for children or females to read. Works on agriculture are as much adapted for our improvement as those on law, divinity, or the arts, are for other professions and employments. As one among cultivators of the soil, I must confess that what I know on this and other subjects, has been acquired by reading, study and inquiry, since I left school. This reminds me of what a teacher once told me, that I did not come to him to be instructed!! It is my duty said he to teach you the elements of knowledge, and to point out the path, the method, and the books by which you may hereafter improve and instruct yourself.

Now then if the young farmer desire to improve himself, let him read Liebig's Familiar Letters, and read and study Johnston's Agricultural Lectures, as designated at the head of this article, and if he do not understand half their contents, I predict he will rise from the perusal, satisfied with the necessary expenditure in the purchase, (\$1.25) pleased with his improvement and mental refreshment.

In referring to the first edition published by Wiley & Putnam, in Feb. 1842, we find that the work was not then complete, as our copy contains only eight lectures and a short appendix. The new edition now before us is in two handsome octavo volumes, divided into three parts. The first parts treat, of the organic elements of plants in eight lectures; the second of the organic elements of plants in five lectures; and the third part, of the improvement of the soil by mechanical means and by manures, in five lectures. Added to these is an appendix containing numerous and detailed experiments made in England in 1841 and '42, on various crops with saline substances as manures, or fertilizers with manures, such as common salt, Glauber's salt, soot, sulphate

of ammonia, sulphate of magnesia, nitrate of soda, nitrate of potash, caustic lime, carbonate of lime, silicate of potash. These substances, together with many others, were experimented upon singly or in duplicate and triplicate combinations, and the entire appendix contains a mass of information in tabular forms, with remarks, highly valuable to all who seek information as to their application and utility to the crops to which they have been applied.

To the practical farmer the appendix is perhaps the most valuable part of the work, as a test of that which is theoretical; and as the experiments are condensed it is easy to refer to them if we are desirous to repeat them in this country. The writer of this article has within the last two years made experiments on some of these substances, but without the benefit of Professor Johnston's work. With it and the knowledge of what has been done elsewhere, they may be repeated or modified with advantage.

We should like to make some extracts and remarks upon the text of the work under consideration, if they did not take up too much space in the columns of the Cultivator. First then on the subject of Labor.

Labor, bodily labor, health-giving muscular exertion, is too often looked upon as disgraceful even here in the north, but more so as we travel south of Pennsylvania. Instead of looking upon labor as a disgrace or a curse, we esteem it as a *blessing*, as the human frame is not constituted for sloth or idleness. We agree with our author, who says: (Lect. 2d, p. 32, vol. 1.)

"But set man free from the necessity of tilling the earth by the sweat of his brow, and you take from him at the same time the calm and tranquil pleasures of a country life—the innocent enjoyments of the returning season—the cheerful health and happiness that wait upon labor in the free air and beneath the bright sun of heaven. And for what? only to imprison him in manufactories, to condemn him to the fretful and feverish life of crowded cities."

Aye, my young countrymen and fellow laborers in rural employments, the "*fretful and feverish*," and I may add *the artificial life of large cities*, is destructive of health and calm enjoyment. Let us not be deterred from industrious exertion, from bodily labor, because it is obnoxious to some. Bear in mind, that

"Honor and shame, from no condition rise,
"Act well your part, there all the honor lies."

Let us call your attention to another subject. You will find by reading Johnston and other publications relating to agriculture, and the growth of vegetation, that mere theorists have frequently drawn hasty and erroneous conclusions from a few isolated facts. Some for instance have made plants grow and increase in weight in water only, and hence concluded that water was the constituent and necessary ingredient in their nourishment. Others found that all plants increased in growth by withdrawing something from the atmosphere. Others again that they absorbed water and air from the soil by their roots, and so they were nourished and increased in growth. All these looked upon the soil as a mere mechanical mixture only necessary to sustain trees and plants in their position. Later writers have corrected their errors. Let us see what our author says on this subject:

"We have seen reason to conclude that while plants derive much of their sustenance from the air, they are also fed more or less abundantly by the soil in which they grow. From this soil they obtain through their roots the carbonic acid which is continually given off by the decaying vegetable matter it contains." (Vol. 1, p. 201.)

The reader may see more in detail (p. 83) how the vegetable matter increases; and how (pp. 84 and 85) plants are partly supported by the air, and partly by the soil. Hence when we remove a crop from the field, we remove a portion of the soil, and disturb the equilibrium of nature, (Liebig, Familiar Letters,) to restore which we must apply manure.

"Though manures in the soil act immediately thro' the roots, they stimulate the growth of the entire plant; and though the application of a top-dressing may be supposed first to affect the leaf, yet the beneficial result of

the experiment depends upon the influence which the dressing may exercise on every part of the vegetable tissue." (Vol. 1, p. 146.)

Again on the subject of manures, practical men as well as writers, have differed as to the quantities, the quality, the time and the manner of applying them to the soil, but more particularly as to the value or utility of the various ingredients now employed singly or in combination with manures. Johnston comes to the following conclusion on some of these points, showing us what is requisite in the soil, and consequently what our manures should contain:

"Thus, (says he) if some ascribe the fertility of the soil to the presence of the alkalis in great abundance, others to that of the phosphates, others to that of lime, others to that of alumina, and others, finally, to that of vegetable matter in a soluble state—all these extreme opinions are reconciled, and their partial truth recognised, in one general principle, that *a soil to be fertile must contain all the substances which the plant we desire to grow can only obtain from the soil, and in such substance as readily to supply all its wants; while at the same time it must contain nothing hurtful to vegetable life.*" (Vol. 1, p. 420.)

This brings us to remark that farmers must stick to the old method of making barn yard manure, which in its animal, vegetable and saline substances contains most of the essential ingredients for the nourishment of plants. We must not rely on any one saline ingredient highly recommended, nor be carried away with the lauding and puffing of some factitious ingredient presented as a substitute for all other manures. We should rather have said the improved method of making barn yard manure, such as is described in Mr. Gaylord's Prize Essay in the Transactions of the State Agricultural Society (vol. 2, p. 65.) To our manure heaps may occasionally be added lime, potash or other fertilizing substances as observation and judgment may direct.

But let us keep within bounds and conclude by saying that on the subject of manures, animal, vegetable, saline, and factitious, Johnston's Lectures contains a mine of wealth for

A PRACTICAL FARMER.

Staten Island, Dec. 23d, 1843.

ANIMAL PHYSIOLOGY.

MESSRS. GAYLORD & TUCKER—No department of rural economy is probably less understood, or more deserving of consideration than that of animal physiology. There are in the state of New-York alone not far from six millions of sheep, two millions of cattle, and as many swine kept, except working oxen, for the sole purpose of transforming cultivated plants into mutton, beef, pork, lard, tallow, butter, cheese and wool, in that way, which will yield to the husbandman the largest return for his land and his labor. According to the census returns of 1840, the crop of hay grown in this state the year previous, was worth \$30,000,000. And as every farmer knows that there are nearly twice as many acres in pasture as in meadow in New-York, it will be within the truth to estimate the whole grass crop of the state at \$60,000,000. Will the intelligent reader answer this plain simple question: Do the cultivators of the soil in the Empire State now realize the largest practical return in valuable products, from the entire *raw material* consumed throughout the whole year, by these millions of domestic animals? If they do, then we have already attained to that happy perfection in the science of physiology beyond which improvement can go no further!

It is with pain and mortification that I see so many legislators and men of influence, unwilling to aid in any well directed public effort to open the book of nature, so that every farmer in the state may see, read and understand *how* it happens, and *why* it is, that one sheep can elaborate twice as much muscle, tallow and wool, from a given amount of food, as another? The same causes which have so developed in preceding generations, the woolforming organs of Mr. Corning's 130 Cotswold ewes, that they are now annually elaborating 8 lbs. of good wool per head, would, if judiciously made to operate on the six millions of sheep that clip per head but

2½ lbs. of wool, so improve the action of their capillary organs, as to give their owners twelve million pounds more wool than they now get, and at the same cost of land and labor. A love of truth, and a deep sense of the importance of my subject, compel me to say that our farmers generally manufacture very *poor* and *defective* machines for transforming grass, hay and roots, into mutton, tallow and wool. I can not now command the time to write an elaborate essay upon the anatomy and physiology of sheep; and demonstrate, as I think I can, how it happens that more than 50 per cent of the elements of wool, tallow and muscle, put into the sheep's mouth, are needlessly lost.

Many of our practical agriculturists do a little better in the manufacture of living machines for transforming grass, grain and roots, into beef, butter, cheese, pork and lard. The average loss from the needless waste of the *raw material* in our cattle and swine is, however, at least 30 per cent. Indeed, how can it well be otherwise, when not one farmer in a thousand knows what food is best adapted to the production of muscle and fat, or of butter and cheese? Not one farmer in a thousand knows how to *alter* and *improve* the ceaseless action of any organ in the animal system, so as to make it not only perform more work in a given time, but to do its work, or if you please, to discharge its peculiar function, far better than before.

The arteries that convey the elements of milk to the lacteal gland of the cow can be increased, both in number and size. The gland itself can be made to expand its surface, and multiply all its secreting vessels, which separate milk from the circulating blood. A large portion of milk with its dissolved butter and cheese, are carbon, water and nitrogen. By a serious defect in their organic structure, (which can be removed in the course of a few generations by skilful management, and scientific breeding) some cows expel daily from their lungs 70 ounces of carbon and water in proportion, which come from the food of such animals, while circulating in their blood vessels. Others will get along quite as healthily and give off through their lungs from their circulating nourishment, only 50 ounces of carbon and water to match; retaining the 20 oz. of carbon, and its accompanying ingredients, for the manufacture of good rich milk.

Whatever may be the precise value of the grass, hay, grain and roots, worked up annually into beef, pork, butter, cheese, mutton and wool in the great state of New-York, is it not plain that genuine science can aid the mere muscular toil of *eternal hard work*, so as to achieve a much greater good in a given time? If so, then kind reader do send down to your servants, the Legislature, *one petition* for the establishment of a State Agricultural Institute, where shall be taught 500 young practical farmers, coming equally from all parts of the state, all the natural sciences that will render agricultural labor *more profitable* and *more useful* to the community at large. We annually expend thousands of dollars to teach thousands of young men how to acquire wealth by other means than productive labor—riches called into existence by the hard work of other men—why shall not something be done to teach our sons, not only how to live better by productive labor than they now can; but also how to keep what their labor produces from the "itching palms" of those so well instructed to live by pursuing some branch of unproductive industry? Why create a state of society that now practically compels the great producing classes, to toil on day by day through life, at from 50 cents to one dollar, while those that produce little or nothing, are paid a high bounty as the reward of comparative idleness? When will our people learn that the knowledge of the *few*, no matter how profound, can never compensate for the ignorance of the *many*?

D. LEE.

JAMES GOWAN, Esq., near Philadelphia, lately received from the Phila. Soc. for Promoting Agriculture, premiums for the following crops: Sugarbeets, 1078 bushels per acre, at 60 lbs. to the bushel; sugar parsneps, a fourth of an acre, at the rate of 868½ bushels per acre; field carrots, 687 bushels per acre—both the latter weighing 40 lbs. to the bushel.

PHILOSOPHY OF WOOL.—No. II.

YOLK.

MESSRS. EDITORS—This peculiar substance is so called abroad, from its adhesiveness and color; but with us it is termed *gum*, an appellation derived from its glutinous properties, quite as appropriate. It is apparent in the fleeces of fine wool sheep, especially the Merino, at all seasons of the year, but very much so in the winter and spring; and although diffused through the whole fleece, yet such is its profusion in the Merino, that it is observable in detached concrete particles, resembling ear wax. According to the chemical analysis of Vanquelin, it consists principally of a soapy matter, with a basis of potash; a small quantity of carbonate of potash; a small quantity of acetate of potash; lime in an unknown state of combination; and an atom of muriate of potash. Its peculiar odor, well known to those familiar with the fleeces of Saxon and Merino, is derived from the infusion of a small quantity of animal oil, and is in every respect a true soap, which would permit of the fleece being thoroughly cleansed by the ordinary mode of washing, were it not for the existence of this uncombined fatty or oily matter, which remains attached to the wool, and rendering it glutinous, until subjected to the process of scouring by the manufacturer.

There is a diversity of opinion as to the uses of the *yolk* or *gum*; while very many through ignorance, imagine it a detriment to the wool, which, however, is a decided mistake. It is a peculiar secretion from the glands of the skin, acting as one of the agents in promoting the growth of the wool, and by its adhesiveness, matting it, and thereby forming a defence from the inclemency of the weather. From accurate observation, it has been ascertained beyond doubt, that a deficiency of yolk will cause the fibre to be dry, harsh and weak, and the whole fleece becomes thin and hairy; on the contrary, when there is a natural supply, the wool is soft, plentiful and strong. The quantity is depending on equability of temperature, the health of the sheep, and the proportion of nutritive food it receives.

Although it is found in some degree in the fleeces of every variety of sheep, such is its excess in the Merino that it causes dirt to collect on the surface to such a degree as to form an indurated crust, with a hue resembling the thunder cloud. This excess, although as already remarked, no way injurious to the fibre, yet in one sense it is so to the manufacturer, from the uncertainty as to the amount of loss sustained by cleansing. Hence it is that the European manufacturer refuses to purchase the Spanish Merino wools, without being thoroughly washed with soap, which is performed after the fleece is shorn, and even then the wool shrinks by the manufacturer's mode of washing, generally about 10 per cent. It is from this cause too, that the American manufacturer, from increasing competition, has latterly become more cautious in his purchase of home Merino wool, the redundancy of glutinous matter and its unavoidable attendant, dirt, causing so large a proportion of the weight of the fleece.

It has been observed that temperature has an influence in determining the quantity of yolk; hence, the equable and mild climate of Spain is favorable to its production; and although the Escorial Merino is the parent stock of the Saxon, (the Escorial possessing it in a less degree than the Paular and other varieties, yet from the opposite character of the climate of Spain and Saxony, it is found in a diminished quantity in the Saxony wool. This breed, however, when kept in fair condition, has the requisite supply to give additional softness, pliability and strength to the fibre, without subjecting the manufacturer to the same degree of uncertainty as to loss from cleansing, the dirt collecting much less on the surface than with the Merino.

On the authority of Mr. Youatt, the wools of several breeds of sheep in the south part of the kingdom abound in yolk in great abundance, so that a fleece, unwashed on the back, will lose one-half of its weight by thorough scouring. A deficiency of this substance is perceptible as progress is made northward; and in Northumberland and Scotland, it is not uncommon for the farmer to supply its loss by means of *smearing* the sheep, immediately

after shearing, with a mixture of tar and oil or butter. To confirm the propriety of this, which will also afford additional testimony of the virtues of yolk, I will quote a recorded fact from Mr. Bakewell, the distinguished sheep breeder. "An intelligent manufacturer in my neighborhood, who kept a small flock of good woolled sheep, informed me he had adopted the practice of rubbing the sheep with a mixture of butter and tar. He could speak decidedly to the improvement the wool had received by it, having superintended the whole process of the manufacture. The cloth was superior to what ungreated wool could have made, if equally fine; it was remarkably soft to the touch, and had a "good hand and feel," the appearance of the threads being nearly lost in a firm even texture, covered with a soft full nap."

The additional value, then, the yolk imparts to the wool, affords a useful lesson to the wool grower, to take such care of his sheep as will best supply the needful quantity. Equability of temperature being one requisite, he should protect his flocks during the winter season; and good condition being another, wholesome and nutritious food should not be spared.

FORM OF THE FIBRE.

The fibre of wool is circular, differing materially in diameter in the various breeds, and also in different parts of the same place. It is generally larger towards the point and also near the root, and in some instances very considerably so. Mr. Youatt's description cannot be simplified or improved. "The fibres of white wool, when cleansed from grease, are semi-transparent; their surface in some places is beautifully polished, in others curiously encrusted, and they reflect the rays of light in a very pleasing manner. When viewed by the aid of a powerful achromatic microscope, the central part of the fibre has a singularly glittering appearance. Very irregularly placed minuter filaments are sometimes seen branching from the main trunk like boughs from the principal stem. This exterior polish varies much in different wools, and in wools from the same breed of sheep at different times. When the animal is in good condition and the fleece healthy, the appearance of the fibre is really brilliant, but when the sheep has been half starved, the wool seems to have sympathized with the state of the constitution, and either a wan, pale light, or sometimes scarcely any, is reflected."

His closing paragraph is especially true. The wool of half starved sheep can be detected without any difficulty by the wool stapler and experienced buyer, and its consequent deterioration affects the price. The fibre of such wool is finer, it is true; but the numberless *breaches* injure every manufacture for which it is used. This is another illustration of the bad policy of farmers in neglecting to keep their sheep in uniform good condition. Healthy sheep will produce healthy wool, both being always the most valuable, and consequently paying the largest dividends.

Elasticity and special curve of the fibre will be noticed in the next chapter.

L. A. MORRELL.

Lake Ridge, Tompkins co., N. Y., Jan. 28, 1844.

SPECULATIVE HOBBIES.

MESSRS. EDITORS—In reading an article in the London Farmers' Journal, I was struck with the following expressions, which, though designed for the meridian of England, "will answer," (as old Nath. Low used to say of his almanacs,) for America:

"How careful ought gentlemen to be who canter their speculative 'hobbies' after *pleasurable* pursuits, that they do not instigate others to gallop after phantoms that only allure them into fatal mistakes. Reprehensible too, is the man who ventures to recommend plans for public adoption of which he has not made full proof from oft repeated experiments."

Would it not be well if these principles were a little more attended to in this country?

JONATHAN.

LARGE STEER.—Mr. Rufus Lyman, Colbrook, Conn., killed a half Durham two-year-old steer, in January last, that weighed 898 pounds.

REARING CALVES.

MESSRS. EDITORS—I would beg leave to drop a few remarks on the subject of rearing calves, having had considerable experience in that branch of rural economy. When I first commenced farming I had to pay heavy *cow rates* every year (as the term was.) I never could get my calves through the first winter without losing one or more. They would grow poor towards spring—their backs would assume the appearance of an arch—the scouers would set in, and they would die in despite of all my care and attention. Experience and observation have convinced me that *lice* was the primary cause of all the difficulty; and for several years past I have adopted the practice of destroying them in the fall, or forepart of winter, since which time I have not lost a calf. I have tried many remedies, but the best thing I have ever tried is sulphur. I take two parts of lard and one of sulphur, melt the lard, and when nearly cold mix in the sulphur, and rub it thoroughly on the parts most frequented by these troublesome vermin, and they will soon disappear. It sticks close to the hide and hair, and continues to scent until they shed their coat, and prevents any more from getting on them from other animals with which they may chance to come in contact. I keep my calves by themselves, and have a warm shelter for them to go in when they choose, in addition to as much good hay as they can eat. I give them each half a pint of oats or corn meal ground in the ear night and morning, and I never was troubled with having my calves get so fat in winter as to die with the black leg as your correspondent in the January No. of the Cultivator complains of.

Tyre, N. Y. Jan. 1844.

JASON SMITH.

POUDRETTE.

The following letter has been sent us by the gentleman to whom it is addressed, with the request that it should appear in the Cultivator:

New-York, 16th Nov. 1843.

ANTHONY DAY, Esq., President of the Lodi Manufacturing Co.—Some twenty year's pretty close attention to the subject of agricultural chemistry, in England, France, Belgium, and other parts of the globe, has rendered me familiar with the nature of manures and amendments generally, as used by various nations.

For the last eighteen months, I have carefully examined your system of preparing poudrette from night soil and other fertilizing compounds, at your establishment on the Hackensack river, in the State of New Jersey, near the city of New-York, and I have no hesitation in stating that I have witnessed very important improvements introduced by you, into the manufacture of poudrette during that period, which render the compounds far more fertilizing, than anything I have ever before encountered in this country or in Europe.

I am not, therefore, surprised at the result of your experiment on Indian corn, grown in the vicinity of New-York, and recently exhibited at the Farmer's Club in this city. It seems that it was planted on the 27th June, 1843, during a severe drouth; that it was up two feet in three weeks: was fit for the table, as green corn, in sixty-six days, and was sufficiently glazed to prevent injury from frost in seventy-eight days. All this is easily accounted for, from the fact that your *new combination* is calculated to absorb humidity, ammonia, carbonic acid and nitrogen from the atmosphere, as well as to retain these fertilizing substances in the poudrette itself, giving them out only as vegetation requires them for nutrition. This has been hitherto a desideratum in manure. In a word, the fructifying power of your poudrette is greatly increased, its operation upon vegetable matter quickened; it obviates the effects of a long continuance of dry weather; retains the ammonia and other fertilizing gases in the soil; attracts similar gases and moisture from the atmosphere; of course ripens crops quicker; is much more lasting as a nutritive amendment, and what is of no little importance to the farmer, I see you mean to reduce the price from 40 to 25 cents per bushel. I further undertake to certify, that in your compound there is no raw peat, turf, meadow-mud, nor any other article that is not in itself

highly fertilizing, and consequently it is adapted to every climate and to all descriptions of soil, whether calcareous, argillaceous, or silicious.

I am respectfully, sir, your ob't serv't,

W. A. KENTISH.

P. S. It may not be amiss to remind agriculturists that the *best soil* is an admixture of chalk or lime, with clay and sand, which are, in reality, the component parts of loam. It is evident, therefore, that a chalky soil requires the addition of clay and sand; a clayey soil needs chalk or lime and sand; and a sandy soil, chalk or lime and clay. Where sand is not obtainable, coal and other ashes answer the purpose fully as well, but sea sand is preferable for lands some little distance from the coast, where it can be procured with facility.

W. A. K.

NATIONAL FAIR AT WASHINGTON.

MESSRS. GAYLORD & TUCKER—I observed in the last No. of your paper a writer, J. S. S., who was anxious to have a national exhibition of agriculture and manufactures in the city of Baltimore, during the great political conventions which are to be assembled there during the month of May next. I have made considerable inquiry of the Baltimoreans in relation to this proposed exhibition, and I find they are opposed to having it in that city, but will most willingly unite in a fair to be held in this city, where party politics cannot interrupt and prostrate the real objects of the friends of these great interests. We have every convenience here for such an exhibition, and it would amply repay any visitor thereto to have the facility of seeing the well arranged collections of the exploring expedition, as well as the thousand curiosities arranged in order by the enterprising commissioner of patents. I understand that the Horticultural Society of this city will hold its annual exhibition about the same time, perhaps upon the same day of the Agricultural fair; and combined, they will make as interesting a show as could be made in any other part of this country. I throw out these hints for your consideration, and I do hope you or some of your readers will give us your or their views fully upon this highly important national subject.

Washington City, Feb. 8, 1844.

J. F. C.

VERMONT AGRICULTURAL SOCIETIES.

ALMOST every county has formed its County Agricultural Society, in accordance with a law of the late Legislature, which gives to each society formed a sum equal to that raised by itself to be awarded in premiums, to be paid out of the State Treasury. This will give a new stimulus to every branch of agriculture. Can you not send a few more Cultivators into every township in this State, and thus help yourselves and us at the same time?

Williston, Feb. 12, 1844.

O. C.

✂ We should be much pleased to send at least 15 copies to every town in the State. By clubbing together 15 copies may be obtained for \$10, making them come at only 67 cents each—cheap enough, surely.—EDS.

FATTENING CATTLE WITH POTATOES.

MESSRS. EDITORS—There is quite a difference of opinion among farmers, with regard to fattening cattle with potatoes. Some contend that when cattle are fed on potatoes they should be kept in the stable, and not allowed any water. They contend that the animals will take on fat faster, and are not so apt to scour, as when allowed to drink. My own opinion is, that cattle, whether fed on potatoes, turneps, or meal, should be turned out of the stable every morning, and suffered to drink as much as they please. Nature, in this respect, is the best teacher. I should be happy to have the experience of others on this subject.

L. D.—D.

GATES FOR BARNS.—If you have any bars on your premises, substitute gates in their stead. These are both time and labor-saving fixtures, and have the additional merits of being more secure and more convenient. Winter is the time to make your gates.

RICH MILK.

MESSRS. EDITORS—Under the head "Valuable Cow," in the last (Feb.) no. of the Cultivator, we find a summary of a statement made by P. H. Schenck, Esq. of Mattewan, of the extraordinary yield in butter, obtained by him from his cow *Emma*. Mr. Schenck's well known high standing in the community, gives us the fullest confidence in the accuracy of his representation, and a cow yielding at the rate of nearly three lbs. of butter a day, would be feebly characterized as a *valuable* cow; in truth, she might better be termed *invaluable*. Looking to the ordinary yield of butter from milk, which may be calculated at from eight to twelve quarts, according to its richness, we here find an animal giving at the rate of one lb. of butter to nine and one-seventh pints of milk, considerably less than five quarts to a pound. We have frequent instances of that amount of butter from cows yielding extraordinary quantities of milk, say from 32 to 40 quarts per diem, but very few (if any,) of so large a proportion of butter compared to the quantity of milk; in fact, on first reading the statement, I considered it unparalleled and almost incredible. Since then, however, in hunting up instances of extraordinary yields of butter, &c. I have met the following, in which the cow *Emma* is as much surpassed as she is before others. In Young's Annals of Agriculture, vol. XX, p. 281, it is said, "Lord Egremont has a *Chinese* cow whose milk is singularly rich; one pint of it on experiment, yielded as much butter, four ounces, as seven pints of the milk of a *Sussex* cow, neither being set for cream, but the milk churned directly from the cows. I (Arthur Young,) did not see this *Chinese* cow, but it was described to me as smaller than any *Alderney*—seems very fat, and as clean in the chap as any deer. This is an extraordinary fact, and seems much to confirm former observations on the quality of the milk of different cows; it is not the quantity but the quality that should be attended to; eight gallons of milk in one day from a *Suffolk* cow, are not uncommon, but the product of butter is never equally extraordinary," &c.

A remarkable Scotch cow is mentioned in the same work, vol. XXXI, p. 33, as giving 20 scotch pints of milk, which being skimmed thirty-six hours after milking, produced fifty-seven ounces and a half of butter, (English weight,) which is about twenty-four pounds a week.

Soon after Mr. Schenck's statement met my notice, I paid a visit to this remarkable creature of his, but was unlucky in not finding her liberal owner at home, and was therefore obliged to rely upon the representations made to me by the person who has her in charge.

In your notice of her, you do not mention the circumstance of her having received an injury in her spine, as appears from Mr. S.'s letter; such is the fact, and I am sorry to say it is likely to prove fatal before her period of gestation has elapsed, and I believe none of her progeny have been reserved. The injury was received, according to my informant, from the bull, and when she is made to stand up she seems to suffer greatly from its effects; when lying down she appears free from pain, and seems to have a good appetite.

She is a large rather raw boned animal, hornless, and to my eye gives no indication of possessing any *Durham* blood, though the Am. Agriculturist conjectures her to be three quarters of that blood. Would she be hornless were this the case? To me she appears to be of the ordinary polled breed, of which we have many specimens in the district, and generally good milkers. The above mentioned *Suffolk* cows are also a polled breed. One or two circumstances in her history, leads me to suspect that the amount of butter obtained from her milk must be attributed not to her natural habit, but that it has been owing to a stimulated secretion induced by the injury received. One is, as her keeper informed me, that her milk was not only of a creamy consistency, but in place of a rich yellow was actually red in color. Again, in 1842, when she gave as much as 18 quarts of milk per diem, her yield of butter was 15 lbs.; more milk and less butter than during the past season, when from 15½ quarts, 3 lbs. 8 oz. of butter were obtained. True, in the first case her keep was only grass—probably an abundance of that, how-

ever; and in the second, besides pasture, she had night and morning, a bushel of cut hay and 8 quarts of shorts. We can hardly attribute the alteration in her lacteal secretion to this change in her diet; the food was not sufficiently rich to account for the difference in the quality of her milk. I therefore conclude that it was owing to a disease in the animal function. We find afterwards in September, with the same improved allowance, when giving 11 to 12 quarts per day, she yielded but 10 lbs. of butter per week.

Yours respectfully,

JOHN W. KNEVELS.

Fishkill Landing, N. Y., Feb. 7, 1844.

N. B. Will Mr. Minor, or some other manufacturer of the article, state the exact proportion of pure night soil in the poudrette offered by them for sale; until this is known, we cannot judge as to the economy of the application.

SEEDING GRASS LANDS—PROPER TIME FOR CUTTING AND METHOD OF CURING HAY.

MESSRS. GAYLORD & TUCKER—Hay constituting the principal dependence of the agriculturist, as winter provender for horses and cattle, it is absolutely necessary he should know the proper season, and most approved mode of cutting and curing it.

Having been requested to make known the experiments I have tried and fully tested, I now submit them *pro bono publico*, with all due deference to the opinions of my seniors in agriculture.

When preparing a meadow or upland, I usually seed on wheat, sowing in the fall half a bushel of timothy seed to the acre, which is limed at the rate of three hundred bushels; and the following spring, after a moderate fall of snow, one bushel of clover seed, top dressed with charcoal dust, and rolled. From land so treated, I cut last season, three tons of hay to the acre. My practice is to commence cutting when one-third of the blossoms of clover have turned brown, and the timothy just parting with its bloom. The grass thus cut is drawn immediately into the barn, and one bushel of fine salt spread by hand thinly over each alternate layer composing a ton, as stowed away in the mow. The salt prevents mow burning, molding, &c. and the stock are induced to eat it as greedily as they would new mown grass, which it nearly resembles, as its most nutritious juices are preserved, being diffused through the stem of the entire plant at that period of its growth. If left on the ground until the seed ripens, the saccharine juice of the plant is lost.

The principal desire of the farmer should be to preserve the green appearance of his hay, and at the same time make it tender and palatable to his stock. The fermentation which ensues after it is housed, secures that object, and prevents the inevitable injury to his meadows which follows ripening grasses. By early harvesting he obtains a luxuriant growth of aftermath or rowen, almost as nutritious as the first, and as much relished by cattle, but peculiarly adapted to sheep.

It is now supposed by chemists, that the plan of keeping a large stock of horned cattle for the express purpose of manuring a farm, is an erroneous one on this account.

The ash of all grasses, contains by analysis, in greater or less proportion, according to the varieties, *Potash, Soda, Lime, Magnesia, Alumina, Oxide of iron, Oxide of manganese, Silica, Sulphuric acid, Phosphoric acid and Chlorine*, many of which substances are required in the animal economy, to form muscle, blood, horns, hoofs, etc., and are forever lost to the farmer.

If instead therefore of keeping stock for that purpose, he were to convert his straw, chaff, and refuse hay, into manure in a compost heap, by means of lime, lye, charcoal dust, &c. would he not save, without the least loss, every requisite for the ensuing crop?

Yours respectfully,

R. L. PELL.

Pelham, Ulster co., Jan. 21, 1844.

DR. THOMSON of Delaware, will please accept our thanks for his friendly suggestion. We like it much, and shall endeavor to carry it into effect, though it will take some considerable time to make the preparations necessary to accomplish the object in a proper manner.

THE POTATO.

A very pleasant and obliging friend, an eminent physician, once said to me, "Give me plenty of good potatoes, and I will never starve." A gentleman of talents and education, an extensive traveler on both sides of the Atlantic, April, 1836, while sitting at my table and feasting on my large, well-baked and delicious long reds, denominated them "bounties." I once heard a little fellow exclaim, "Good cracked open potatoes in the morning, Oh! how good!" The potatoe is indeed a noble and generous root—a great dietetic blessing,—and like the Indian corn, the boast, as well as the native of America. This valuable plant is said to have been originally wild, unpleasant to the taste, and poisonous; wholly unused by the Aborigines; and to have been brought to its present state of perfection by cultivation.

What I know of its history is as follows:—Near the close of the 16th century, Sir Walter Raleigh, an enterprising British nobleman, made several attempts to plant an English colony in Virginia. Once, after coasting along the fertile Guiana, entered the mouth of the grand and beautiful Oronoko, and, for purposes of discovery, sailed up that river 600 miles. That he found the potato somewhere in America, is acknowledged on all hands; but *where*, we are not informed;—probably up the Oronoko. I have of late heard of it in a wild state, somewhere on the south-west coast of South America. It is a matter of history, that said Sir Walter, about the time just named, introduced the potato into Ireland. After trying it in his garden, from the seed balls I conclude, and observing no ocular demonstration of good promise, he ordered his gardener to extirpate it, as "a useless weed." On doing this he found unexpectedly, at the roots, a bushel of fine potatoes. After this, it was cultivated as an esculent root in Ireland about a hundred years, when it was, with some improvement, returned to America, and introduced as a curiosity upon the table of the Governor of Massachusetts. When a child, I learned from a very aged woman, who was a cook in said Governor's family, that she first saw potatoes there about the beginning of the 18th century, and that they were small and of disagreeable flavor. Her observation then was, "If great folks like such things as these, because they are novelties, I am sure they are welcome to them for all me." Much prejudice was against the potato, causing a very scanty cultivation of it, even so late as the war of the revolution; which prejudice is not yet entirely eradicated.

The more observable qualities of the potatoe are,

1. It does not too highly excite the human appetite. This is a grand affair in the province of temperance and health. Even the best table varieties are not liable to be eaten to excess.
2. There is probably no kind of food that has a more just and healthful proportion of bulk and nutriment. Its proportion of soluble and nutritious matter is said to be 25 per cent; whereas that of the beet is 14—of barley 83—of wheat 85—of rice and beans about 90—and peas 93. This fact renders it easy of digestion, and unlikely to surcharge the system, and produce dyspepsy; a matter by no means unworthy of sober notice and reflection.
3. The potato, like milk, contains a just proportion of aqueous substance, combined with the nutriment, that it is for man and beast, both food and drink. This is a great convenience, especially for those who labor abroad—for those who wish to fatten cattle with potatoes, while in a state of confinement—and for people at sea, where this root can be preserved.
4. It is very easily grown and cooked; of course a very cheap article of food.
5. It does not exhaust the soil like most other vegetables, especially oats and turneps, and leaves it in a good state for some other crop.
6. New varieties, and the best, are easily obtained from the seed-balls; taking however about three or four years to bring them to maturity, when trial and just selection may be made.
7. It is very easily preserved, whether dried like fruits or not; whether reduced to its farina or starch, or kept in its original state. It never rots without gross

abuse, or exposure, and is never "strong" as it is called, I think, nor, of course, *poisonous*, without too much heat from the sun, or fire, or warmth in the cellar, or being too long in warm or hot water at boiling. If you would have the best potatoes good on your table, then *keep them shaded, moist and cool—cook them just enough, as quickly as possible, and then have them away from water and heat.* I think the potato cut up in a raw state, dried and ground into meal, should help much in any preparation of bread stuff, especially griddles and puddings. *Let it be tried.*

As to the merits of different varieties, the Chenangos or Novaseotias, the Leopards, the Long Whites, the Deep Blues, the Carters above all, and some others, are all excellent for the table. But, on the whole, I prefer the Early Reds, (which I produced from the seed-ball myself,) the Blue Kidneys, and the Blue Pointers, mixed together for early growths—the Long Reds, after being acclimated, for feeding out to cattle—and the Carters for the table, after becoming ripe. These last, well cooked, approach the nearest to good wheat flour.

As to the manner of seeding, I plant about 15 bushels the acre, cutting the large ones to save seed. After trying the planting of large and small, cut and not cut, I never saw any difference in the results.

With regard to methods of cultivation, there exists much prejudice and misconception. I will give my own method, towards which I have been long approaching, while I have, in agriculture, been endeavoring to diminish the expense and increase the profit.

Let sward ground be generally used, after becoming well rotted either by being plowed long enough beforehand, or by growing thereon previously a crop of oats. Spread on some 30 loads of manure to the acre; *plow deep and fine*, just before planting; furrow 2½ feet apart very lightly, so that when the potatoes, planted about one foot apart, are properly covered with a hoe, the ground shall be left level: cover lightly, and just as deep as in your judgment will cause the seed to come up, and *no more*; hoe once at proper time, and once only, assisted by a light harrow or cultivator; but leave the ground as level as possible. If weeds appear of considerable size, mow them with the potatoe tops before hard frost, and hay the whole for cattle. All this together makes excellent hay, if well made. The later you dig your potatoes the better, if kept out of the way of frost. Should you desire the greatest present profit from well-managed corn ground, plant about 5 bushels of potatoes the acre, and a few pumpkins with your Indian corn. Peas and beans, planted in the rows, sometimes do well, without injury to the potatoes.

But do not, I entreat, furrow your ground too deeply for any seed—do not put manure in the "hill," or "hole"—do not press the ground over the seed at planting—do not plow between the rows—do not "hill up;" but leave the ground as level as convenient till harvest: for the old practices are pernicious errors, causing much hard labor to be useless or worse.

It is a maxim with me, founded, I think, on the dictates of nature and reason, that *where there is the most manure, there is needed the most water.* How does it seem then, to put the manure in the hole, and then hill up, to turn away the water from the very place where you caused it to be most needed?

I have obtained at the rate of 634 2.5 bushels of early Blue Pointers the acre. But my average crop, during 24 years, has not varied far from 200 bushels the acre.

During many years, I have not boiled potatoes for any brute animals, believing it does not "quit cost."

In 1842, I obtained from ½ of an acre, 26 bushels of Rohan potatoes, and rising of 6 hundred of excellent hay, by mowing all above ground, as before suggested. This hay was worth quite half as much as the potatoes.

Whoever would grow rich by farming in high cold regions, must turn his attention much, and properly, to grass, oats and potatoes.

Respectfully to all concerned,

EZEKIEL RICH.

Troy, New-Hamp. Jan. 30th, 1844.

LIBERALITY to the earth, is the source of its bounty.

The Garden and the Orchard

CULTURE OF FRUIT TREES.—No. 3.

THE APPLE.

In raising young apple trees, the stocks should be seedlings, and not suckers, as the latter furnish less perfect roots; and as those varieties which produce suckers most freely are chosen, they are apt to prove troublesome from the abundance which they yield.

Transplanting apple trees is generally performed with far too little care; though their hardiness will enable them to endure bad management, the thriftiness from good treatment far more than compensates all additional labor. The mode of proper transplanting has been described in a former number. Where the quantity of land is small, such care is especially necessary.

It is now satisfactorily determined that apples are a most profitable crop for feeding domestic animals; hence larger orchards are becoming desirable. Those on good land will occupy less if placed in the hexagonal form, or in equilateral triangles, thus:



For several years after young trees are transplanted, the ground should be constantly cultivated. This is easily performed so long as the trees remain small. When they become large, an occasional cultivation, with intervening crops of grass, may be sufficient for extensive orchards.

It is a common practice to neglect not only cultivation but *pruning*. Irregular and stunted trees, and small and inferior fruit, are the consequence. These may be prevented by moderate, frequent and judicious pruning, if the trees are not already old. The object is to diminish the thick growth, to increase the vigor of the branches, and to admit light and air. The best and most thrifty branches should be left, the distance asunder being as nearly equal as possible, and forming a well shaped top. The branches should be cut closely in pruning, but not so much so as to occasion too broad a wound. If the wounds are an inch or more in diameter, they should be protected by a thick coat of paint, or better by a mixture of brick-dust or whiting with warm tar. This prevents cracking, admission of moisture, and the consequent rotting of the branches. Pruning should never be done in spring when the sap is flowing, but may be performed either in winter or in summer. A sharp saw is the best tool for removing large limbs.

There are many orchards of ungrafted and comparatively worthless fruit, which might be greatly improved by converting the tops to good varieties. This is usually done by grafting into limbs two or three inches in diameter, but it is more difficult to perform, and the young shoots are much more liable to be broken off by wind, than when grafted into small branches. A sufficient number of young and thrifty shoots may be obtained in one season for grafting, by cutting off a few of the most central and larger limbs, when fresh ones will spring up vigorously in their place. As the grafted branches increase in size, the old ones are to be gradually removed.

It would be difficult, even for one extensively acquainted with the varieties of the apple, to give a complete selected list; the difficulty is increased by the great uncertainty of names among cultivators, and the multiplicity of synonyms for the same fruit. Lindley says with much truth,

"In apples, a greater confusion exists in this respect, than in any other description of fruit. This arises not so much from the great number of varieties grown, as from the number of growers, some of whom seek to profit by their crops alone, regarding but little their nomenclature. Nurserymen, who are more anxious to grow a large stock for sale, than to be careful as to its character, are led into error by taking it for granted that the name of the fruit they propagate is its correct one,

and no other; hence arises the frequency of so many fruits being sold under wrong names. Gardeners, who purchase trees, become deceived by this procedure, and do not discover the error, unless they have been imposed upon by the substitution of something *worthless*, and obviously at variance with the character of the fruit sold them. This is a serious evil, to say nothing of the disappointment of the purchaser; for unless the mistake be detected at first the longer the tree grows before it is discovered, the more time will have been lost by its cultivation; and be it remembered, this time is irrecoverable."

It is care alone that can correct this evil; nurserymen should propagate for sale a smaller number of varieties on the one hand, and examine thoroughly a larger number on the other, that they may prevent confusion and mistake by the former, and improve their selection by the latter. Purchasers must be careful to obtain them from those sources most to be depended on; or if they raise their own trees, they should, if possible, obtain their grafts from trees, whose genuineness has been proved by actual bearing.

In giving a short list of apples, it is to be remembered that there are many good varieties, and that some must therefore be omitted; and to some, such a list may seem badly selected, in consequence of the many inferior fruits falsely called by the name of excellent varieties. The following list may assist the cultivator in selection:

SUMMER FRUIT.

Yellow Harvest,
Early Sweet Bough,
Early Red Juneating,
Summer Pearmain,
Sine Qua Non,
Burlington's Early.

AUTUMN FRUIT.

Belle-bonne,
Strawberry Apple,
Summer Queen,
Ramboo,
Autumnal Swaar,
Gravenstein,
Fall Pippin.

WINTER FRUIT.

Bellflower,
Swaar,
Peck's Pleasant,
Esopus Spitzenbergh,
Jonathan,
Ortley,
Baldwin,
Rhode Island Greening,
Ribston Pippin,
Newtown Pippin,
Roxbury Russet,
Tallman Sweeting,
Northern Spy.

All these are in a greater or less degree, suitable for table fruit; and some of them are also peculiarly adapted to culinary purposes. As the day for the manufacture of cider has passed away, and a far more profitable use is made of apples in feeding domestic animals, no varieties expressly for cider are given.

To those who have but small gardens, the following are more particularly recommended:

Yellow Harvest,
Bough,
Sine Qua Non,
Strawberry Apple,*
Gravenstein,

Fall Pippin,
Swaar, Baldwin,
Spitzenbergh,
Jonathan,
Northern Spy.

The uses of apples are becoming yearly better understood, and their value constantly increasing to the farmer. It is now satisfactorily proved that they are not only excellent for fattening hogs, but are equally so for feeding milch cows during winter. Horses may also be advantageously fed on *sweet* apples. For cows and hogs, the difference between sweet and sour apples is found to be far less than generally supposed. A moderate estimate of the expense of one acre of orchard, (remembering that the ground may be cultivated with crops while the orchard is young,) will show the cost at from one to three cents per bushel; their value for feeding hogs has been proved to be much greater than the same quantity of potatoes.

THE DISEASES AND ENEMIES to which the apple tree is subject, are generally not formidable. It has however, sometimes serious ones to contend with. Among the chief are, 1. The Caterpillar. 2. The Borer. 3. The Canker. 4. The American Blight. 5. The Canker Worm.

*This variety appears to be known only in western New-York, and appears to be greatly superior to any other variety of that name. Nearly the only nursery which has furnished it, is that of Thomas & Smith of Macedon.

1. **THE CATERPILLAR.**—This was formerly the most formidable evil the apple had to contend with in Western New-York, and in fact the only one of any importance. There are several species; but the only one which proves seriously injurious, appears in the spring as soon as the leaf buds begin to open, at which time it is not the tenth of an inch long nor so large as a cambric needle; it increases constantly in size for a few weeks till it is two inches long and a quarter of an inch in diameter. It then spins a cocoon and passes to the pupa state. In the latter part of the summer, it changes to a brown miller, and deposits its eggs in cylindrical rings of several hundred each round the smaller branches. Every ring of eggs destroyed in fall or winter, which may be easily done by cutting off the small shoots which hold the eggs and burning them, will prevent a nest of caterpillars next season. If left till they hatch, they are easily killed when they first appear, by a caustic or poisonous solution, as of lime, ley, or of tobacco, applied to them with a cylindrical brush on a pole. The later the operation is deferred, the more difficult the work becomes. They have much diminished of late years, but need watching to prevent increase.

2. **THE BORER.**—This is an insect which enters and perforates the wood of the tree at or a little below the surface of the earth. In Western New-York they rarely prove destructive to the apple tree. They may be taken out by introducing into the hole they have made, a flexible barbed wire, or punched to death in their holes by a flexible twig.

3. **THE CANKER.**—This is sometimes termed *bitter rot*. It is ascribed to various causes. By some it is considered as arising from neglected culture—poorness or wetness of soil, or exposed situation. But the most probable, or the *immediate* cause, appears to be injudicious pruning and bruises. Decay generally commences at the wounds thus caused, and extends till the tree dies. To prevent it, never prune in spring while the sap is in active motion, and protect all wounds of much size from air and moisture by a coat of paint, or of tar and brick dust. The only way to cure trees already diseased, is to cut away all affected parts and apply a suitable covering to the wound. It rarely proves a serious evil in this country.

4. **THE AMERICAN BLIGHT**, (so called,) is caused by the *Aphis lanata*, a small insect so thickly covered with fine white hair as to appear enveloped in fine cotton. It is furnished with a small bristle-like beak, with which it perforates the bark of the branches. Excrescences rise, the limb grows sickly, and perishes. Branch after branch is assailed in turn, and the whole tree ultimately dies. It is easily destroyed on young trees, and older ones if recently attacked, by brushing over the affected parts a mixture of equal parts of fish oil and rosin melted together and applied warm. The operation should be performed as early in the season as possible, or when the insect is first perceived.* In England, many trees have been greatly injured, and some destroyed by it. Although introduced into nurseries in this country, it has hitherto proved of little injury, and if carefully watched probably be kept from spreading.

5. **THE CANKER WORM**, where it has appeared, is perhaps the most destructive to apple trees of any insect in America, but it has hitherto been confined in its ravages to certain parts of the country, particularly of New-England. Its habits are thus described by Kenrick:

"The canker worm, after it has finished its work of destruction in spring, descends to the earth, which it enters to the depth of from one to five inches. After the first frosts of October, or from the 15th or 20th, those nearest the surface usually begin to rise, transformed to grubs or millers. They usually rise in the night, and invariably direct their course to the tree, which they ascend, and deposit their eggs on the branches, which are hatched in April or May. They frequently rise during moderate weather in winter, when the ground is not frozen, and in March, and till towards the end of May. When the ground in spring has been bound by a long continuance of frost, and a thaw suddenly takes place they are said sometimes to ascend in incredible numbers."

They destroy all the leaves of the tree and thus even-

tually cause its death. The only effectual remedy yet devised is to prevent their ascent, which is effected by means of circular lead troughs filled with fish oil, encircling the tree.

J. J. T.

GARDEN VEGETABLES.

While the attention of the farmer cannot be too strongly urged to the formation of a good vegetable garden, our object here is not so much to remind him of the garden generally, as of the cultivation of some three or four plants, which are very excellent, but which are frequently missing in the farmer's garden. The first of these is the *Rhubarb*, or pie plant. This no garden should be without, as it is easily cultivated, comes into use when fruits or other vegetables are scarce, and its acid, when cooked, is most grateful and healthy. A few shoots cut from the roots, and planted in rich ground, some four feet apart, will in a short time, furnish stems (the part used,) enough for a family. We had a variety of this plant, the stems of which were enormous, but unless cut early, they become fibrous and coarse, compared with the other or common kind grown by us. To use it, take the stem of the leaf, strip it, cut it in thin slices transversely, and bake it in paste as you would apples. It requires more sugar than the apple, but in flavor is far superior.

Another plant too much neglected is the *Lima Bean*. This bean is rather tender for our climate, and if planted too early, sometimes rots in the ground or is killed by the frost. The ground on which these beans are planted should be made rich and deep, the seeds covered about half an inch deep with fine mold, and the poles should be placed at the time of planting. They should be planted as soon as the ground is warm enough to secure germination, which, with us, is usually the middle or last of May. The vines usually grow until arrested by frost; consequently all the beans will not be matured. The Lima bean is far the best of the beans used as food, and is equally good used green or dry. Those who are fond of *succatash*, or green corn and beans, in the winter, will find this far better than any other for this purpose. They should be picked and dried for winter's use, and when wanted, soaked in soft water over night; then put into the water for boiling, cold, and boiled till tender, with the prepared corn, and a piece of salted pork.

The *Horse Radish* is a plant richly deserving a place in the farmer's garden, though too often, through carelessness, it is allowed, when once introduced, to spread where it is not wanted, and in some instances to become a nuisance. There is no need of this, as the radish is as easily confined to its proper allotment in the garden, as the potato or artichoke. It is propagated by sets or by taking the crown of the plant, with a few inches of the root, and burying it in deep rich soil to the depth of eight or ten inches. If the set is split into two or three parts, retaining a part of the crown on each, the plant may be increased more rapidly. Before planting, the ground should be dug and manured to the depth of 18 inches or two feet. The plants may be set in the spring or fall; but perhaps as good a way as any, is to put out the sets at the time of gathering the roots, and if desirable, in the same place. The leaves make one of the earliest and best of greens, and the roots grated and bottled with good vinegar, make, when used in moderation, one of the healthiest and best of condiments, with either boiled or baked meats.

The *Tomato*, though now much more common than formerly, is still not to be found in many farmer's gardens where it should be certainly, if the mandates of imperious fashion are in any degree to be heeded. The tomato, though found in its greatest perfection in southern latitudes, can, with a little attention, be grown in most of our gardens, and furnish for months a wholesome, and to many a most agreeable article of food. Few like the tomato at first, but the taste soon becomes not only reconciled to it, but is much pleased with it. A rich, stiff loam is the best soil for the tomato. A good way is to sow the seed in a hot bed in April, and transplant when danger from frost is passed. The plants should be four feet apart in rich good ground, and the vines should be

* If applied early, lime white-wash will destroy it effectually.

supported by a frame work of some kind, or brush, as the fruit will be better than if left on the ground. There are several varieties of the tomato, but the large red for the table or preserving, and the cherry tomato for pickling, are perhaps the best. They are used in various ways; eaten in vinegar as cucumbers, made into soups, into toasts, baked in pie, but perhaps the greatest use is in tomato sauce, which is highly esteemed.

There can be no doubt that our farmers might, at a little expense, greatly enlarge their list of valuable garden esculents; and in so doing materially decrease their annual expenses, while they are at the same time adding to their comforts.

APHIS OF THE CHERRY TREE.

MESSRS. GAYLORD & TUCKER—Huber, in his account of the ants of Switzerland, says there are some species which obtain their principal food from the honey-like substance that is excreted by the aphids—that the ants watch, tend and keep the aphids for its honey, as men do cows for their milk. I have not, by any direct observation of my own, been able to verify this fact in reference to our American ants. Mrs. Darling, on one occasion, had the good fortune, on raising a flat stone in the spring, to see the ants pick up and carry off the aphides which had been housed for the winter in the same habitation. I have no doubt therefore but that our ants are, as Huber expresses it, a “pastoral people,” as well as those of Switzerland. It is quite probable that the aphids of the cherry tree in particular is domiciled with the ants in winter, and in the spring, as soon as the leaves are unfolded, is carried by the ants to the trees where it finds pasture for the summer. It rather confirms the supposition, that when the cherry aphid first makes its appearance in spring, it is on leaves very near the ground. I have had occasion to turn this fact to account, in preserving my young cherry trees from this destructive insect. Summer before the last, I had about a thousand young trees, which, before I was well aware of the evil, were covered with the black aphid. All the usual applications recommended in books, were made without much effect. I was forced to give up the trees to the insects. The trees in consequence were very much stunted in their growth, and what was quite as bad, grew crooked and deformed. The last season I determined to commence the destruction of the aphid at its first appearance. As soon as the leaves started in the spring, I examined the trees carefully, especially near the ground, and killed with the finger the few insects that were to be seen. In this way my trees were wholly preserved from injury, and without any other trouble than looking over them, at first every day, afterwards every 2d, then 3d day, and finally once a week.

Peach trees which have been tarred in the spring for protection against the borer or peach worm, are never infested with the aphid—I suppose because the ants cannot carry the aphides up the trees over the tar.

My plum trees were preserved in a different manner. The trees were suffered to stand unattended to, till I supposed the ants had carried up all the aphides which they intended to put in that pasture. I then cut off every leaf where insects were to be found—and no more made their appearance. I took care however to leave untouched the leaves on which were the eggs of the *chrysopa perla*, a green, lace-winged, fetid fly that devours the aphid. These eggs are hung to the underside of a leaf by a small thread about $\frac{1}{4}$ of an inch long; and should never be disturbed. NOYES DARLING.

CUTTING SCIONS.

THIS is a good month for cutting scions. They should be kept in a cool, moist place, till the sap runs briskly, when they may be set. If they are to be carried any distance, it is well to dip the cut ends in wax, and pack in moss, dampened a little.

ORCHARDS.

MR. HARKNESS, writing on the management of orchards, in the *Prairie Farmer*, advises to go over the trees in the spring as soon as the leaves begin to start, to clean off the eggs of the caterpillars, and examine the

roots to see if the borer has been there. If there are any holes made in the tree by insects, fill them with hard soap. Wash the tree with soft soap, diluted with an equal quantity of water. In a month after, look again for the borer; he can be traced by his “saw-dust;” dig him out. Go through the orchard again in July, and give the wash as above.

GRAFTING GRAPE VINES.

THE following is the mode practiced by the late Mr. Herbemont, of South Carolina. “Take away the earth around the vine, to the depth of four or five inches—saw it off about two or three inches below the surface of the ground. Split it with a knife or chisel, and having tapered the lower end of the scion in the shape of a wedge, insert it in the cleft stock, so as to make the bark of both coincide, (which perhaps is not necessary with the vine;) tie it with any kind of string merely to keep the scion in its place, so as to leave only one bud of the graft above the ground, and the other just below the surface, and it is done.”

TO KILL THE PEACH TREE BORER.

MR. JAS. CAMACK, of Athens, Ga., in a letter published in the *Magazine of Horticulture*, recommends fish brine, diluted with an equal quantity of water, and a pint to be turned round each tree in the spring or fall. The trees on which he used this liquid were 2 $\frac{1}{2}$ to 3 inches in diameter. To smaller trees he thinks less brine should be applied.

Domestic Economy.

EXPERIMENTS IN MAKING BUTTER.

The following communication, we think valuable because the experiments which are detailed, seem to have been conducted with the care and judgment necessary to establish a fact. We are not disappointed at the results—former experience having led us to believe that where milk is kept at the right temperature, all the cream will rise, and we can get no more than all by the scalding process. Either of our correspondent's plans is far better than letting the milk freeze, which should not be permitted.

MESSRS. EDITORS—In the winter of 1841, we instituted some experiments by scalding the milk with a view of ascertaining a better method of obtaining cream and making butter in cold weather than heretofore adopted. Our experiments then were confined to the milk of one cow; it now embraced the milk of five cows, which probably may account for the difference in the amount of milk taken to produce a pound of butter. It is well known that cow's milk is liable to vary considerably, according to the nature of the food and the state of the weather. The quality of the milk of a cow, can easily be decided by a lactometer, or by setting a portion of it for cream, in a wine-glass, and comparing it with others in the same way, and under the same circumstances; or the milk of a particular animal can be placed by itself for a period of time, and the actual produce determined.

There is a great difference in the quality as well as the quantity of milk given by cows of the same appearance and treated in the same manner. Not unfrequently in the same herd, the product of one cow is worth double that of another. The writer has known one cow whose milk would not produce butter, and strange as it may appear, she raised the fattest calves of any cow in the herd. It is presumed that every person who keeps a cow is desirous of having one of superior quality, but it is more the result of good fortune than prudence if he obtains such an one in the ordinary way.

Our object in the present experiment, was made not only with a view to ascertain the comparative advantage, if any, of heating the milk, but in the time employed in converting the cream into butter; the amount obtained from a given quantity of milk; and the quality of the butter, all managed under circumstances as nearly alike as possible. The difficulty of raising cream and making good butter in cold weather is well known to all who have paid any attention to that branch of the farmer's business.

The results of our experiments in 1841 induced the belief that heated or scalded milk produced the greatest quantity of cream and best quality of butter; but the comparative experiments now made, and the results, confound us. The process of scalding milk is troublesome, and the milk after the cream is removed, is poor and of but little use, except for the pigs. Although we are much disappointed in the result, we take great pleasure in making it known. The object is interesting not only to those who make farming their business, but to every family whose situation and circumstances make the keeping of this valuable animal, the cow, practicable; it is important not only because cows supply the market with milk and butter, but because they contribute so much to substantial domestic comfort and convenience.

Experiments correctly made and fairly tested form the data on which improvement should be founded. Exactness is important to one's character and usefulness. There is a satisfaction too, in knowing what we do. For this reason we were very particular to weigh the milk when taken from the cow and strained into the pans, to note the temperature when setting for cream; to weigh the cream before churning; to note the temperature while churning; the time employed in churning; and the weight of the butter after having been thoroughly worked.

Agriculture must be considered as one of the exact sciences, and we shall never know whether our progress in it is forward or retrograde, until we have done with guessing. But, methinks I hear you say, "it is troublesome to be exact." We answer, the trouble is not so great where the habit is once formed; and is very much more than compensated by the satisfaction experienced in doing it.

The result of the experiments are as follows: The night's milk of five cows, commencing on the 5th of Jan. and ending on the 9th, was subjected to the following process. As soon as the milk was drawn from the cows it was strained into tin pans, and weighed, and amounted to 70½ lbs. After standing twelve hours, boiling water was introduced in an under pan, made for the purpose, which is sufficiently deep to hold about the same quantity of water as there was of milk, the top of the under pan fitting closely to the upper part of the other; the under one nearly straight on the sides, the other flaring, by which means sufficient room is left to retain the steam. From the 70½ lbs. milk, after standing in a room, the temperature of which was from 50 to 55, thirty-six hours, 6½ lbs. of cream was taken from it. This cream was churned in a temperature of 60 degs. and produced 3¼ lbs. of butter—time of churning 17 minutes.

On the 11th of Jan'y we commenced setting the milk for cream in the usual way, from the same cows in the same room, in a temperature ranging from 48 degs. to 56 degs.; after standing forty-eight hours it was skimmed. It was so managed that the same amount of milk, (70½ lbs.) was used, which produced 14 lbs. cream, in which unavoidably remained considerable milk. This cream was subjected to the same process and temperature as the former, (60 degs.) and produced the same amount of butter, and occupied 12 minutes in churning.

Now, there may have been some ounces difference in the two parcels, as our steelyards mark nothing less than ¼ pounds, but we were particular in noticing the movement of the beam, and did not discover any material difference.

From the above experiments we have arrived at the following conclusions: That when the milk room is cold, say 30 degs. it is most advantageous to scald the milk, but when the temperature does not fall below 48 degs. little or nothing would be gained by adopting it. There is so little difference in the quality of the butter that it would be difficult for the nicest taster to distinguish which was made the one way or the other. The color too, is so similar that it would be supposed both rolls were made from one churning.

C. N. BEMENT.

Three Hills Farm, Jan. 20, 1844.

Mr. JOHN THOMPSON, of Farmington, Conn., killed a hog in Jan. last, that weighed 750 lbs.

Veterinary Department.

BARREN COWS.

"I have a beautiful Durham Cow, sired by the imported bull Talleyrand, No. 2728 Herd book, vol. 3. She bred one calf, when 3 years old; since that time, now 2 years, she has been regularly in heat, and faithfully attended, yet with no result. She is strongly predisposed to take on flesh, but is now as low as I think prudent or safe. What shall I do with her.. GEORGE HEZLEP."

Instances like the above, are not uncommon, and frequently occur among our most valuable and high bred animals. Reducing the flesh sometimes removes the difficulty, but not always, and in such cases there seems no alternative but to fatten. Had we a valuable cow from which we were particularly anxious to breed, if other remedies failed we would adopt the one described by Mr. Bonner, on the 23d page of the current vol. of the Cult. which succeeded so well with a sow—partial spaying—and think it probable it might succeed. As it would, if well performed, be attended with little or no danger; and if it did not produce the effect desired, would not injure the animal in the least for feeding, we can see no objection to its trial in such cases.

BLIND TEETH.

We have several communications on the subject of "Blind Teeth," or "Wolf Teeth," in horses, signed as follows: *Edgar, A Daily Laborer; John M. Harland, John M. Johnson, Peter Ellis, Jas. M. Ellis, Peregrinator, and Quercus, (U. C.)* With the exception of one or two, they all seem to agree that these teeth are injurious and ought to be taken out. This may be done by placing a piece of iron (or as some say, hard-wood,) against the teeth, and giving it a blow with a mallet or hammer.

Quercus says he does not believe a word in regard to the injury which it is asserted these teeth occasion; says he had a mare which had "wolf teeth," and was told that she would certainly go blind soon; but he kept her many years, and she had good sight till the time of her death. Mr. Peter Ellis says, he "has extracted many of these teeth, but whether it has been attended with any great benefit, is at a loss to determine." He thinks, however, that it is best to take them out. We find there are others who have doubts on the subject, but all agree that it does no hurt to take out the "wolf teeth," and it may do some good. These teeth are not confined to horses of one section of the country, for we have accounts of them from Georgia to Canada. Neither are they, as has been suggested, confined to horses which are fed mostly on Indian corn; we hear of them where the horses never ate any corn of any consequence.

Since writing the above, we have received two letters on this subject. One from Mr. Samuel M. Spengler, and one from Mr. U. Skinner, both of Virginia. Mr. S. enclosed one of the teeth referred to. He says they do not always occasion injury to the eyes; the worst effect is produced when they come out close to the other teeth, (that is, the grinders,) and the farther they are from them the less the injury.

MURRAIN.

JOHN GRANT, in a communication to the Mark-Lane Express, gives the following as "an almost infallible" cure for Murrain, if applied on the first appearance of the disease:

Sal prunelle,.....	2 oz.
Stiptic powder,.....	2 "
Balsam Copavia,.....	2 "
Nitre,.....	1 "
Glauber Salts,.....	4 "

Dissolve the whole in half a gallon of table beer, with half a pound of soft sugar added, and give as a drench; the good effects of which may be visible in twenty-four hours—after which, let the sick cattle be put in a field where there is plenty of water, as a desire to drink is one of the first symptoms of convalescence.

Look well to your bees during this month.

ISABELLA GRAPE VINES,

OF proper age for forming vineyards, propagated from and containing all the good qualities which the most improved cultivation for over ten years has conferred on the vineyards at Croton Point, are now offered to the public. Those who may purchase, will receive such instructions as will enable them to cultivate the grape with entire success, (provided their locality is not too far north.) All communications, post paid, addressed to R. T. UNDERHILL, M. D., 400 Broadway, N. Y., will receive attention. He feels quite confident that he has so far ameliorated the character and habits of the grape vines in his vineyards and nurseries, by improved cultivation, pruning, &c. that they will generally ripen well and produce good fruit, when planted in most of the northern, all the western, middle and southern states.

New-York, Feb. 1844.

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AMERICAN FARMER'S ENCYCLOPEDIA AND
DICTIONARY OF RURAL AFFAIRS,

WITH 17 beautifully executed plates of Cattle, Agricultural Implements, Destructive Insects, &c., complete in 1 volume, 1150 pages, price \$4, bound—embracing all the recent discoveries in Agricultural Chemistry, adapted to the comprehension of unscientific readers, by Cuthbert W. Johnson; enlarged, improved and adapted to the United States, by Governor Emerson, assisted by numerous scientific gentlemen.

An excellent manual of agriculture—and we venture to say that there is not a farmer in the United States that cannot derive many useful hints and much valuable information from this Encyclopedia—Albany Cultivator.

No farmer or planter who desires to be master of the science of his profession, should be without this work.—American Farmer.

Its merits are far greater than we had before imagined, and we are fully convinced that such an amount of valuable knowledge for farmers can be found in no work in so cheap and convenient a form. In fact, no farmer who pretends to be well informed in his profession should consent to be without it. As a book of reference, it is invaluable—we would not be without it for four times its cost.—New Genesee Farmer.

Should be in the library of every farmer.—American Agriculturist.

We heartily recommend it to our readers, and wish every farmer in North Carolina would take it and study it carefully. Raleigh Star.

A real treasure of practical information wherein the experience of all ages and countries is carefully posted up to the present day, and admirably arranged for convenient reference.—Dr. Darlington.

For the farmer who can have but few books, we know of no one relating to his profession so valuable.—Prairie Farmer.

fe 2t

CAREY & HART.

POUDRETTE—A NEW ARTICLE.

IMPROVEMENTS of such a nature have been made in the manufacture of Poudrette, by the Lodi Manufacturing Company, near the City of New-York, as to warrant the opinion that it is the *cheapest and best Manure* now known and in use. By experiments which have been made, it has been proved that its *fructifying powers have been greatly increased, its operation upon vegetable matter quickened.* It will obviate the effects of *severe drought*, and will retain its fertilizing qualities much longer than any Poudrette heretofore made. It will ripen Corn in 66 days fit for use. The price will be reduced the following season as follows: At the Factory it will be sold in bulk at the rate of 25 cents per bushel. It will be delivered at any wharf or place in the City of New-York, *free of cartage and other expense*, at the rate of \$2 for one barrel, which contains 4 bushels; \$3.50 for 2 barrels; \$5 for 3 barrels, and \$10.50 for 7 barrels; and at the rate of \$1.50 per barrel for any greater quantity. Persons wishing the article will please give notice in due season, as the orders will be fulfilled in the order of time received. The Company was incorporated in February, 1840, for 30 years by the Legislature of New-Jersey. No liability to stockholders beyond their subscription of \$100 per share. A few shares of what is called the "Reserved Stock," remain to be subscribed for, which the Company guarantee shall pay a dividend of 50 bushels of Poudrette a year on each share, as authorized by the Charter. A pamphlet containing instructions for its use, and all other necessary information, is in preparation, and will be sent *gratis*, to any person applying for it, post-paid. Agents have been or will be appointed in most of the important places in the Northern and Eastern States, to whom persons may give orders. Where there is no agent, please direct to "The President of the Lodi Manufacturing Company, No. 43 Liberty-street, New-York," and it shall receive immediate attention. Please refer to the Letter of Mr. Kentish, in the March number of the CULTIVATOR.

New-York, Feb. 15, 1844.

PRIZE BULLS AND CALVES.

THE subscriber offers for sale two full blood Devon Bulls, which obtained the First Prizes offered for Devon Bulls, at the Baltimore County Agricultural Fair, held on the 19th and 20th October last, viz: Richard, 2 years old last spring, at \$50; Marmion, one year old last June, at \$50. Also: 3 full blood Devon Calves, got by the celebrated bull, Waverly. They are large and perfectly formed, and are 6, 8, and 10 months old at this time. Price—\$40 each. They are of a suitable age for shipping to the South. Address

JOHN P. E. STANLEY,
50 S. Calvert, Corner of Lombard st.

Baltimore, Md. Feb. 1, 1844—2t



FIELD SEED STORE.

THE subscriber continues to keep constantly on hand at his long established Seed Store, a supply of the best quality and kinds of Field Seeds, viz:

Red Clover, of the large and small growth,
Timothy, Red Top, or Herd's Grass, Orchard Grass,
Lucerne, or French Clover, White Clover,
Trefoil, Kentucky Blue Grass, &c. &c.

Also, the different varieties of Wheat, as White Flint, Red Chaff, Mediterranean, and English—for sale in lots to suit purchasers at moderate prices, by
ISRAEL RUSSELL,
Feb. 1, 1844.—mar. oct. 56 Front-street, New-York.

ROBT SINCLAIR, Jr. & CO.

MANUFACTURERS AND SEEDSMEN, BALTIMORE—Offer for sale:

Corn Mills and Shellers,
Corn and Cob Crushers,
Straw and Fodder Cutters,
Fanning Mills,
Vegetable Cutters,
Fruit and Ornamental Trees
and Plants,

25 sorts Plows, including the famous Dolphin Self-Sharpening and Subsoil,
Agricultural and Garden Tools and Seeds, a large and general assortment.

See Priced Catalogue, to be had gratis of

Feb. 14, 1844.—1t

R. S. Jr. & Co.

CAMBRIDGE NURSERIES,

CAMBRIDGE, MASS., TWO MILES FROM BOSTON.

HOVEY & CO., Proprietors of these extensive Nurseries, would respectfully inform their friends and the public generally, that they have now ready for sale, an unrivalled collection of

Fruit and Ornamental Trees,
Evergreen and Flowering Shrubs,
Grape Vines, Raspberries, &c.
An extensive collection of hardy and tender Roses,
Green-house and hardy Herbaceous Plants,
Dahlias and Bulbous Roots,
Hawthorn and Buckthorn, for Hedges,
Apple, Pear, Plum, Cherry, and other Stocks.

This collection of fruit trees embraces all the best kinds; selections of which were made from the best nurseries in England and France, and scions procured from the well known Pomologist, the late R. Manning, of Salem.

The selection of Chinese, Tea, Nisette and Bourbon Pears, includes upwards of 200 varieties, many of them the rarest and choicest to be procured in England. The collection of Dahlias is most extensive, and comprises all the fine varieties in cultivation.

All orders to be accompanied with cash or a draft. Catalogues of fruit trees, roses, Dahlias, vegetable and flower seeds, issued separately, and furnished to all post-paid applicants. Trees, plants, seeds, &c. packed so as to be safely transported to any part of the Union.

Address, HOVEY & Co., Seedsmen and Nurserymen,
7, Merchant's Row, Boston, Mass.

BAILEY & RICH'S SMUT MACHINE.

MANUFACTURED and for sale by J. T. E. & C. RICH, Shoreham, Vt. Patented in 1841, much improved in 1843.

These Machines are made wholly of iron and steel, very compact, efficient, simple in construction, and durable. They are so made, that a strong current of air is forced into the centre of the machine, and passing out sideways through cracks in the inner and outer cylinders, expels the dust as fast as created, and prevents it from mingling again with the grain, as it does in other mills, so as to often blacken the kernels.

They will clean from 15 to 25 bushels per hour. Warranted to suit upon 3 months trial.

Shoreham, Feb. 16, 1844.—2t

TO FARMERS.

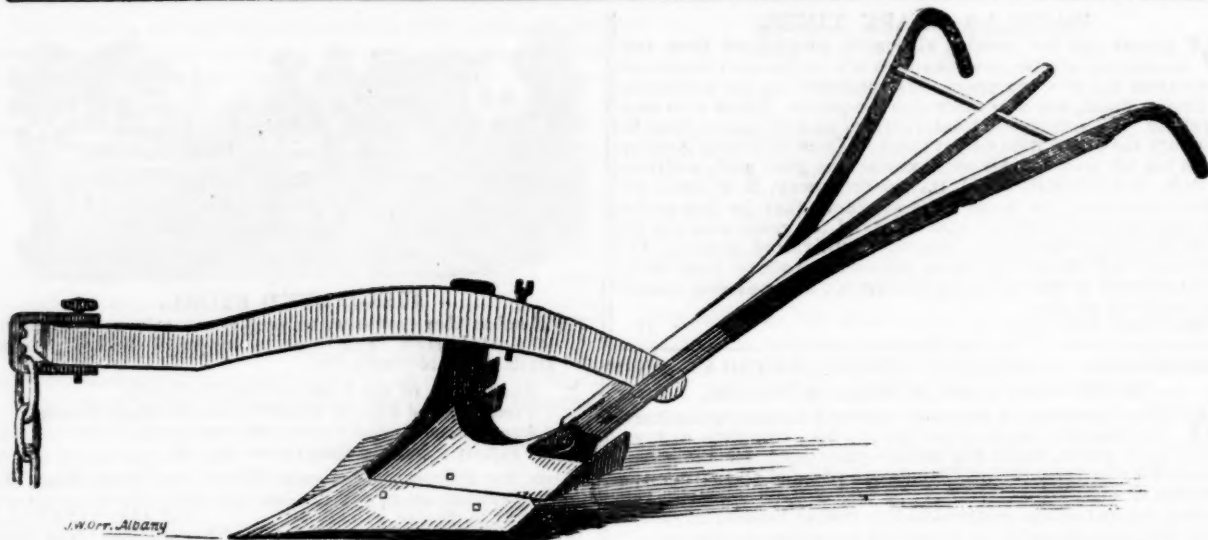
THE subscribers are now engaged in the manufacture of R. McMillen's Patent Cast Iron Plow. This is a new article for this section of country. It has been tested, and works to the entire satisfaction of those who have used it. We invite farmers and others who wish to purchase plows, to call and examine for themselves, as we believe they cannot fail to be suited, and at prices that will correspond with the times.

They are made of the best cold blast iron—are ground, painted—of two sizes, one weighing 80 lbs., the other 100 lbs.

For sale at their store in Troy, at the Rail-road bridge, also at WM. THORBURN'S Agricultural Ware-house, No. 38 Broadway, Albany.

ANTHONY & MORRISON.

Troy, Feb. 14, 1844.—1t*



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IF ADVERTISEMENTS inserted in the Cultivator, at \$1.00 per 100 words for each insertion.

NEW-YORK STATE AGRICULTURAL SOCIETY.

STATE AGRICULTURAL HALL, (old State House,) }
 Albany, Feb. 17, 84 }

The State Agricultural Society now occupy the Hall in the Old State House contemplated by the concurrent resolution of the last Legislature. The Hall is the easterly one on the first story (that formerly occupied by the Comptroller)—the remainder of the edifice being occupied, as this room is yet partially occupied, by the State Geological collection.

Officers and members of County Societies, and friends of Agriculture from other States, as well as this, are invited to visit the Hall when passing through Albany: And Agricultural Committees of the Senate and Assembly, as well as the Committees of the Society itself, will find the Hall ready for their reception at their evening meetings.

The returns which County Societies are required by law to make to the State Society, and other communications touching the farming operations in the several counties, may be left at the Hall in charge of the Recording Secretary:

And all Premiums awarded by the Society, or any other claims upon it, will be paid on presentation there to the Treasurer, THOMAS HILLHOUSE.

By order of the Executive Committee,

JOHN P. BEEKMAN. Pres't.

HENRY O'REILLY, Rec. Secretary.

LANGDON'S CULTIVATOR.

THE HORSE HOE OR CULTIVATOR PLOW, is an implement constructed and patented in 1842, by Barnabus Langdon of Troy, an old and experienced mechanic. After much labor and practical experiment had been bestowed upon it, it was exhibited for the first time at the State Fair held at Albany, and also at the Rensselaer Co. Fair, of that year, and received a premium at both.

There has been a large number made and sold the past season, and they have been thoroughly tested in various ways by some of the best and most experienced agriculturists in this and the adjoining counties, and in the vicinity of New-York, and all testify to their utility and usefulness, and to their superiority over any implement of the kind in general use. They not only do the work more effectually, but in much less time, and at one half the expense of any other Cultivator now in use, which are three important items, in these times of general low prices for agricultural productions. This Cultivator was exhibited at the last Fair of the American Institute, and received a premium. Much attention was bestowed upon it by Southern planters, and a number of them were sold by Mr. Langdon to go South, for working in corn, cotton, and tobacco. The Cultivator Plow is an implement made for weeding and loosening the soil between the hills of corn, potatoes, peas, beans and all root crops.

When weeding, half hilling, or splitting down corn hills, the weed cutters are always to be used, as represented in figure No. 1.* This operation cuts up the weeds, loosens and pulverises the soil completely up to the hill, and by cross plowing there will be little left for the hand hoe to do.

When the crop requires more earthing or hilling than the weed cutters can do, they are to be taken off, and the mould boards are to be put on, as represented in figure No. 2.*

Both occupy the same position on the plow, and both are secured to the standard by one bolt. The mould boards throw a beautiful furrow each way, thus doing the work in one half the time of an ordinary corn plow.

For digging potatoes, or root crops, this implement is unrivalled. When used for that purpose, the weed cutters should be on, and the plow should then be drawn by a double team; direct the plow under the middle of the hill, just deep enough to raise the crop to the surface, which it will do in a most expeditious and workmanlike manner. These Cultivators are made of the best materials, fitted up in the best manner, with share, weed cutters, and mould boards ground bright, ready for immediate use. The price of the implement is \$8 at retail, and a fair discount made to dealers in agricultural implements. Orders addressed to BARNABAS LANGDON, or MOWRY & VAIL, 127 River-st. Troy, (his authorized agents), will receive immediate despatch. They are also for sale by Ruggles, Nourse & Mason, Boston; John Mayber & Co. New-York; Pruyn, Wilson & Vosburgh, Albany; J. N. Woolley, Poughkeepsie; and E. Gifford, Hudson.

The testimony of C. N. Bement, Esq:—

Among the new implements exhibited at the State Fair last fall, none seemed to attract the attention more, or appeared to meet the views of the multitude better, than the Horse Hoe or Cultivator Plow exhibited by Mr. Barnabus Langdon of Troy.

It affords me great pleasure to have it in my power to speak of the merits of this implement from experience, having used one the past season in my corn. My corn ground was laid off in squares, planted in the corners, leaving the hills three feet apart, which enabled me to run the Horse Hoe both ways. The edges of the share being sharp, cut up the weeds, which, with the soil, passes over the cutters, and leaves the soil very light and loose.

The breadth of the share is sufficient for rows of three feet wide, as it loosens and breaks up the soil beyond the reach of the share, and after passing through the crop both ways, there is little left for the hand hoe to do.

It is a very efficient implement, and I have the testimony of a number of farmers and gardeners who have used it, who all speak in the highest terms of it. I did not try it for digging potatoes as my crop was on a side hill; but those who did try it, say it exceeds any thing of the kind which has been introduced for that purpose. Three Hills Farm, Albany, January, 1843.

MOWRY & VAIL, Agents,

Feb. 1, 1844.

127 River-street, Troy, N. Y.

* These figures are necessarily omitted, owing to the room they would occupy.